Vol. 23, No. 11 NOVEMBER, 1931

Journal of Home Economics

METHODS OF DETERMINING STANDARDS FOR HOUSING[1]

NELSON S. PERKINS

National Committee on Wood Utilization, U. S. Department of Commerce

WHEN primitive man, driven by elemental instincts, chose his cavern in the rocks, his standards of housing were safety and comfort. Today we are more discriminating. Our standards of value in a house are more exacting.

But what is value? To the real estate salesman, it is the sales price. To the home economics teacher and student, however, and to the prospective home owner, the term "value" implies more than the dollar and cents involved. To them value in a house means safety and security, sanitation, comfort and convenience, and a certain correctness or distinction. To these factors must be added the financial elements of low maintenance and repair costs and permanent security of the investment in the house. All of these constituents of value—safety, health, comfort, pride of possession, and finally, monetary value—are influenced by numerous details throughout the house.

How, then, can we establish standards or rules that will permit a fairly accurate appraisal of value? The problem can be simplified if we fix in our minds a definite picture of certain criteria. Let this picture consist of the following divisions of physical elements: location; style and appearance; floor plan and room arrangement; structural integrity; mechanical installations, such as the heating and plumbing systems, electric wiring, and lighting.

With these as a basis, we can determine the worth of any house by applying the test of the abstract values of safety, health, and the others, to the more definite physical elements.

[1] Read before the Division of the House, American Home Economics Association, Detroit, June 25, 1931.

First is the location. Many chapters have been written concerning the influences of location on house values. Let us apply our test of value to a few familiar items. From a safety standpoint, we will look for adequate police and fire protection; the health value will require proper sewage disposal, lot drainage, and absence of any nearby stagnant ponds; our standard as to comfort will indicate the desirability of nearby stores, schools, and transportation; our pride of possession will guide us in judging the character of the neighborhood; and our sense of monetary value should urge us to investigate assessments, either future or unpaid, for streets, sidewalks, and curbs.

In addition, the site of the house, the yard and lawn, shade trees, entrance steps that may be dangerously steep, and fences or hedges are all part of our composite picture of value with respect to location.

Our second physical element or standard is architectural appearance. Good design is of importance if we are to be satisfied with our house and proud of it as our home. From a purely financial aspect, a design in good taste may prove vital if the vagaries of fortune compel us to sell later.

How can we recognize good design? That is really the province of the trained architect, since the components of good architecture are often intangible. Nevertheless, there are a few simple rules that may assist us in appraising the design of a house. The style of architecture should be appropriate to the geographical location. Many people think a Spanish bungalow appears a bit incongruous in a snowstorm. True, this is a matter of personal taste, yet it may seriously handicap a resale of the house and so affect the monetary value.

Simplicity and honesty of expression and absence of ostentation, connote good architecture. The simplicity need not be that of Diogenes when he chose to live in a tub, however. Design features should have a utility basis, as to structure, convenience, or architectural balance. If in doubt as to a detail of design, ask yourself, "What is its purpose?"

Materials should be used consistently and not varied simply to exhibit all of the designer's ideas in one little house that probably wants to be modest.

Many houses have no glaring flaws and yet lack attractiveness. Frequently, a change in a few details would have converted the mediocre house into a charming home. A false idea of economy is often responsible for omission of shutters or blinds and for the use of narrow siding instead of wide. One common error in small houses is to extend the foundation walls too high so that you always feel the urge to flatten the house out a little. This extra height may be partially neutralized by skillful plant-

ings of shrubbery and dwarf evergreens that close the gap between the lawn or ground line and the house structure.

Then we have such items as inharmonious entrance details, porches that seem mere afterthoughts, and over-sized dormers that overshadow the main part of the house. All of these may eventually undermine our pride of possession or reduce the resale value.

The third standard to consider is the floor plan or room arrangement. This will affect chiefly the comfort value because of the well-known need for an efficient kitchen layout; convenient routes between kitchen and front door, dining room, and stairways; and for adequate closet space. Also desirable are an entrance vestibule, a downstairs lavatory, a coal bin conveniently placed if coal is the fuel, and storage facilities for vegetables and other foods that need moderately low temperatures.

From the standpoint of safety in emergency and of convenience, a back stairway is a distinct asset. Not only does it provide a passageway for servants and for children coming in from play, but when a caller drops in unexpectedly, it permits the housewife to slip up the back way and change to a presentable costume.

With respect to health value, a floor plan that permits efficient cross-ventilation for rooms and entire floors is almost a necessity. There are also the matters of exposure to sunlight, size of rooms, and size and position of windows.

We come now to the fourth and most important measure of value, the structural integrity of the house. Every component of value—safety, health, comfort, pride, and cost of repair—is involved. Hundreds of construction details must be correctly executed if the house is to measure up to our standard.

And yet we need not be diffident in attempting to judge the character of the construction and the quality of materials and workmanship. A fairly reliable guide is to observe whether details are finished neatly and carefully. For example, are the joints in the woodwork fitted tightly? Are light switches placed squarely or at a slight angle like a carelessly hung picture? Do flanges cover the holes where pipes come through the floors, or are the jagged, sawed edges exposed? We form accurate impressions of a person's character from many little things and we can do likewise with a house, provided we are not swayed too much by a few distractions eagerly pointed to as "the latest things."

So much for a general impression. Now what are some of the essentials of good construction? For safety and security, we should demand first a reasonable protection against fire. This means more than having

a fire-house nearby. Firemen constitute one group that should be paid but kept idle.

In a house, the parts most vulnerable to fire are the chimney construction and the framing near the heating plant. The chimney danger lies in the chance that heat and flames, escaping through cracks and defective mortar joints, may carbonize and eventually ignite adjacent combustible material. It is difficult to inspect a chimney after it has been completed, but during construction, or before, you can insist on a fire-clay flue lining, set in cement mortar, extending the full height of the chimney. This should effectually confine the heat and flames.

As a further safeguard, all wood beams should be at least two inches clear of the chimney brickwork or other masonry, and this space filled with fireproofing material. No wood or other combustible material should be placed against the walls of the chimney. There are numerous other technical limitations placed on chimney construction, including proper foundations and thickness of walls. The two cited, however, namely adequate flue lining and the setting of all wood away from the chimney, would prevent most of the so-called chimney fires.

In the basement, the ceiling over the heating plant should be shielded with a fire-resistant material. Metal lath and plaster along the lower edges of the floor beams is frequently recommended. Even with this addition, there should be at least fifteen inches clearance. This applies also to wood framing at the sides of the furnace or boiler and around the kitchen range.

Just one more precaution should be taken. This is the employment of "fire-stops" to block off air spaces between floor beams and framing members, in case a fire does occur. Fire-stops are most effective at the floor levels.

Safe construction implies, also, protection against high winds and, in some sections, earthquakes. Many houses are damaged by tornadoes and cyclones because the roofs and porches have not been secured to the side walls, and because the framework of the house has not been tied to the foundation wall. It is a simple matter to check on this in the basement. The wood sill resting on the masonry wall should have anchor bolts about eight feet apart extending down into the wall, with a washer and nut to hold the sill in place. In addition, the vertical framing pieces or studs must be well spiked to the sill.

In a frame house, it is best to have the rough boarding which covers the framework nailed in a diagonal direction, unless the house is to have a stucco finish.

If these precautions are observed in a house, we can give it a high rating from the standpoint of safety value, but we should not overlook such items as steep entrance steps and weak, narrow stairways. The basement steps are most likely to offend in this respect; at times their construction may be so weak as to be dangerous.

If, in evaluating a house as to its construction, we apply now our measure of health value, we find a close association with comfort. If we keep comfortable, we generally stand a better chance of keeping healthy.

When we speak of house-comfort, we think of warmth in winter and coolness in summer. These depend first on the construction of walls and roof, and second on the matter of insulation. Every type of wall has a certain amount of insulation value, or the ability to resist the passage of heat. But in addition, a house should be resistant to infiltration of air. That is why a wood-framed house should always have a layer of heavy, water-proof building paper between the rough sheathing and the outside covering of siding, stucco, or other material.

The greatest chance for air-infiltration or heat loss is around windows and doors. Weatherstripping is an effective stop to much of this, but it cannot overcome improper design of window frames. Another source of heat loss is at the juncture of side walls and roof. A careless builder may fail to extend the walls above the bottom of the roof rafters. This leaves a gap between each pair of rafters—a gap that is by no means air-tight because it is concealed later by a decorative cornice molding.

Insulation products are often advocated as a panacea for discomfort in both summer and winter. Insulation added to the walls and to the roof (or to the attic floor, if the attic is unfinished)undoubtedly adds value to the house, but insulation can retard the passage of heat only where actually applied. To be effective, therefore, it must be supplemented by weather-tight windows and doors.

The water-tightness of basement walls and floor may also have an influence on health and comfort and so, of course, may the fireplace and chimney, if the draft is inadequate. The only sure test of a fireplace is to build a fire and judge for yourself whether the smoke is carried off properly.

The next element of value, which I have termed "pride of possession," seems to be related in only a minor degree to structural integrity. Yet the occupants of a house can derive but scant satisfaction from cracked plaster, doors that refuse to latch, or from floors and stairs which, despite safe construction and attractive design, give forth squeaks of protest whenever a person walks over them.

A few of the more vital construction features have been touched upon as to their effect on safety, health, comfort, and pride of possession. Without minimizing these elements of value, it may be stated that from a practical standpoint the house owner is more deeply concerned with how the construction will affect his pocketbook. In the final analysis, the monetary value will depend not only on the elements already mentioned, but in addition, on the yearly cost of maintenance and repair and on the rapidity with which the house depreciates.

Many thousands of families use all of their savings to make the initial payments on houses. By careful economy they plan to pay off the first and second mortgages at so much each month just like rent. The future seems clear until the deadly increasing cost of indispensable repairs knocks out their budget plan. Far too often this compels default on their payments and loss of their home. The alternative may be to disregard repairs and to let depreciation go on with an accelerating speed. In either case, there is an economic loss.

Sound construction will avert much of this waste. Every dollar used by a builder to eliminate serious defects in a house will be returned many-fold to the owner. One hundred dollars added to the cost may add a thousand dollars to the value.

Take, as an example, foundation walls that leak. Perhaps the builder omitted a tile drain along the bottom of the wall to carry off the ground water; maybe he skimped on the cement or the grade of sand; maybe an application of waterproofing to the outer face of the wall would have been sufficient. In any case, to waterproof the walls after the house is built will be difficult and expensive.

Another case is where wood near the ground has been attacked by termites, those wood-eating insects so prevalent in the South, or has become decayed through excessive dampness. The use of selected wood that is resistant to these hazards, either naturally or through chemical treatment, costs a little extra but is worth while, not only for porch supports and steps, but also for the sills and first-floor beams.

Similar chances for improved construction occur all through the house. Rust-resistant gutters and downspouts cost more to buy but will prove cheaper in the end. So, too, with "flashing," the term used for those sheets of metal that are placed along the tops of windows and around roof-openings to prevent water from seeping into the joints. Green or unseasoned lumber may be used. It will shrink, of course, as it dries in the house, and may cause plaster cracks and open joints in the woodwork. Mortar may be used too sparingly in brick work, thus permitting moisture

to seep through the walls to damage plaster and wall paper. A little extra care and expense during construction will obviate most defects.

The last physical element is mechanical installations. This includes the heating and plumbing systems, the wiring, and the lighting. Obviously these affect all of the elements of value, with special emphasis on safety, health, and comfort. Although we cannot hope to pass judgment on the many technical factors involved in the heating plant or the wiring, we can inspect them all for neat workmanship, leaky joints, and similar items. We can see, perhaps, whether the equipment or fixtures are from a reputable manufacturer; and certainly we can determine whether or not the lighting fixtures are suitably located. As to what is the proper size of boiler and hot water heater, number of radiators, and such features, we may well consult a heating contractor or engineer.

We have now traced somewhat sketchily the components of value in a house and have seen how they are influenced in varying degree by location, appearance, floor plan, construction, and the mechanical appurtenances. We cannot expect perfection, but we should be reasonably assured that our house will be safe, healthy, and comfortable, a source of pride and a financial asset—in short, the setting for a real home.

THE WAGE-EARNING HOMEMAKER AND THE FAMILY INCOME

MARGARET WHITTEMORE

Agricultural Experiment Station, Rhode Island State College, Kingston

AT A time such as this, one hesitates to mention the word employment for fear of bringing up dark pictures of suffering due to the lack of it. It may be a relief, therefore, to discuss a more cheerful side of the situation. That this happier prospect comes from a study of the woman who is a homemaker as well as wage earner may seem surprising to many. So much has been said and written about the dire effects of this double demand upon the woman, her home, and the working world, that many have overlooked the possible benefits.

Little has been done up to the present in finding the actual facts, and it seemed a desirable field for Purnell research at the Rhode Island Experiment Station. To avoid confusion from many details, only a small part of the whole involved subject was selected for the present investigation. The prevalence of the wage-earning homemaker in one county of the state and "some of its effects upon her and her family" are the points studied. Although the facts are not yet all secured, the compiled data from 408 women present some pictures of peculiar interest at present.

Because of the requirement of the Purnell bill that the work shall be concerned with rural conditions, the only town in the county with a population of more than 2,500 was excluded from consideration. It would be interesting at some time to have comparable facts from an urban group.

One of the most surprising features of the present study is the large number of homemakers gainfully employed. Possibly the geographical location of the county may account in part for this. The large number of summer residents, due to the fact that the county is bounded on two sides by the ocean, demands various services which give opportunity for part-time or living-at-home employment. Two main arteries of traffic, as well as a number of other hard-surfaced roads bring many tourists and open more fields for money-making to the women of the county. And finally, the fact that almost every home is within easy reach of some mill offers a further opportunity for paid work not always found by rural women.

The outcry from labor that it is unfair for the married woman to work where many men and unmarried women cannot find jobs is effective enough to cause agitation to exclude or dismiss all married women from certain classes of positions, notably those under municipal control. Of course, this is done largely on the assumption that the married woman is adequately supported by her husband, and earning money only for luxuries of various kinds. There is a second assumption that men could and would step into the positions given up by the women. At present we have few data in regard to the latter supposition, but facts already secured shed an interesting light on the former. Of 408 women whose records are completed, 343, or 71.4 per cent, are working for pay because they need the money. This is based not only on their own statement but on a knowledge of the financial situation of the family, shown by the earnings of other members of the family, together with any other source of income. The results of a questionnaire returned by 336 college women who worked after marriage support this finding. Mrs. Chase Going Woodhouse, in an analysis of the returns in the *Journal of the American Association of University Women*, shows that 49.9 per cent gave financial need as their first reason and 46.1 per cent as their second reason for working. According to Frances Perkins, New York Commissioner of Labor, the reason why married women work is the same as that of the men—they need money. She goes on to explain why there is greater need for these earnings now than in earlier times. In the *Mt. Holyoke Alumnae Quarterly* for January, 1931, she says,

> The average working class family cannot afford to support dependent women today any more than it could a generation or two ago. Women made contributions to the family income when they stayed at home to make butter and soap and candles, to milk the cow and to cook and sew. . . . While today women can contribute considerably less to the family income by remaining at home, the earnings of the head of the family are still inadequate for supporting the family.

The studies of the Women's Bureau of the Department of Labor have reached the same conclusion.

While much has been said about the increasingly large number of wage-earning homemakers, it has been a surprise to find so large a proportion of the rural women earning money. This makes it seem even more imperative that we shall have a clearer understanding of what it means in terms of homemaking and family life, so that our teaching of home economics may be better adapted to the newer conditions. According to the census of 1920, there was a total population of 18,700 in the Rhode Island county

studied, excluding the small city not included in the study. About a thousand of these have been found through the study to be homemakers who earn money. It seems probable that in the cities where opportunities for work are greater, the proportion would be decidedly larger.

Since Rhode Island is an industrial state, it is natural that approximately one half of the wage-earning homemakers work in the mills. The next largest group is that in laundering and cleaning. Although steam laundries are readily available, many women, especially the well-to-do among the summer residents, prefer to have their clothes laundered by hand. Some continue to employ the local women in the winter, mailing the laundry from New York, Philadelphia, or elsewhere. The other obvious occupations such as accommodation of tourists, taking of boarders, running of tea rooms or wayside stands, and acting as waitresses, chambermaids, or general houseworkers are well represented. Ten per cent of the total number are teachers; and there are quite a number of clerks, librarians, postmistresses, and dressmakers. Two of the 408 are real estate agents, one is a doctor, four are florists, and seven raise turkeys. One of the latter reported having cleared over $500 in one year from her turkey flock. Others have found more original ways of earning money. Two are rural mail carriers, one of whom has had her route for over 29 years. Another woman, who has always loved horses, found it possible to utilize her ability in handling them and the proximity of the farm to several summer resorts by developing stables with saddle horses for rent. Another woman rents boats and sells bait on a river where fishing is popular. Touching up and finishing photographic plates for a photographer in one of the Connecticut cities is the source of quite a large income for the mother of a small boy living in a rather isolated location. A complete list of the different ways in which the group of women is earning money would show more than sixty different activities.

It may easily be seen that except for some of the mill work and a few other types of work, the women are not competing with men. Even in cases where the kind of work might be suitable to men, it is usually on a part-time basis, or so poorly paid that few, if any, men would be interested. This may not be rating the market ability of the women very high, but in this county it is the present situation.

In light of the facts just stated, it is surprising to find that a weekly total of $4,655.27 was earned by 288 women who were able to give a fairly accurate statement of their earnings. This means a per capita average of $16.16, which is not a large amount on which to support a family, but no mean supplement to that supposedly provided by a wage

earner with undivided demands on his time and strength. If the other 120 of the 408 women had reported their earnings, the weekly average would have doubtless been smaller because many of them were in the irregularly employed group. This circumstance made it especially difficult to state their yearly income.

One of the striking facts of this investigation has been the frequency of the cases in which, during the business depression, the woman's earnings have been the only cash income of the family for weeks or months at a time. In more cases than one, these earnings have been the only thing that has kept the family from actual want and the need to call upon outside help. For although the acuteness of the labor situation has affected the married woman's work to some extent, especially in the mills, for the most part the demand for her work has continued. This may be partly because her services are of more vital nature, and also partly because tourists and summer visitors, like the poor, we have ever with us. A study of the types of work carried on showed that 67 per cent were little, if any, affected by the present business depression.

So far as may be judged from the results obtained thus far in this study, there seems not to have been sufficient appreciation of the amount of work carried on by the homemakers and of the amount of money thus earned. So many factors enter into the effects of the situation on the economic world on one side and the welfare of the woman and her family on the other that a large amount of careful study must precede any attempt at statements of results. For students and teachers of home economics, however, one thing seems clear, that an increasing number of women are continuing or taking up wage earning after marriage. Also, an increasing number of wage-earning women are assuming homemaking responsibilities, for the "old-maid aunt" of the past generations is now the "bachelor maid" with her own little home.

Manifestly, housekeeping and homemaking duties cannot be carried on in the same manner by these women as by their predecessors who had all their time in which to attend to their home duties. In educating for homemaking, the fact that most of the girls marry within a few years after leaving school has given the feeling that they then become full-time homemakers. We are showing in our home economics courses increasing recognition of the fact that much of the time and labor-consuming production carried on in the home in the past has left it and are emphasizing in its place better selection and greater cultural development. If the results found thus far in the section being studied here prove fairly typical it would seem time to alter the training in homemaking to meet the new demands of the two-job homemaker.

HOMEMAKING AS A VOCATION[1]

STELLA HOLLY STOCKING

Detroit, Michigan

HOMEMAKING as a vocation is unique. It is one vocation about which there is little choice. Because you are women, whether you choose it or not, this job of homemaking is bound to be a part of your lives. Wherever a true woman is, there will always be an atmosphere of home. One doesn't necessarily have to be married to be a homemaker. Some of the greatest homemakers are those who are caring for their parents, their brothers and sisters, nephews and nieces. I know many teachers who make a home of their classrooms and who do more mothering than can be estimated.

May I talk about some homemakers I know—gossip a bit about my neighbors? For two months of every year we live in the country, and I am very much interested in the affairs of four of my neighbors. In town I pay no attention to the affairs of the families about me, but out there I am shamelessly concerned about all the intimacies of home life that I can see. These neighbors are much more polite than I am and are quite indifferent to me and my family, but from early in the morning until bedtime I know almost every move they make.

The families live in different types of houses. The Robins have a house that looks as if it were thrown together. It is not a "model home," and their housekeeping is nothing to brag about. But every spring they seem to get great joy in building that home and raising their family, for they sing lustily all the while. They aren't the least bit concerned that their house isn't as beautiful as some others close by. Their children are happy and well fed, and they in turn sing as heartily and enjoy life as much as their parents.

In the same tree there is an exquisitely built home. It is a gem of architecture made by Mr. and Mrs. Oriole. Their home is as beautiful to look at as they are themselves. Great skill is manifested in its construction and they seem to delight in making it a thing of beauty. Their

[1] One of a series of addresses given by people professionally prominent in an intensive program of vocational guidance before the pupils of the Southeastern High School of Detroit, Michigan.

children receive the same care that the Robin children do and they sing even a clearer, sweeter song. But the Robins are too busy with their own affairs ever to waste a moment coveting the Orioles' lovelier home or their sweeter note.

On a fence-post nearby is the Bluebirds' house. Their home building is not elaborate, but they have a well-made structure adequate for the raising of one, two, or three families every year. At evening time, after a day of incessant work providing food for their family, they fly to the highest spot they can find and sing. How wonderful it would be if we, after a long day's work, instead of pouring out a stream of complaints, would rise to the heights and sing.

Then there is Jenny Wren who lives right in front of our house on the hickory tree. She is the greatest little busy-body I know and there are other homemakers just like her. She makes more fuss about getting her house made than all the rest put together. She puts in sticks and pulls out sticks. She tries first one house and then another. If she doesn't like a place she'll fill it with sticks any way just to keep someone else from having it. She isn't content to look after only her own home, but I have known her to try to break up the Bluebirds' home and to interfere with their children. But just let anyone go near her house and oh, how she scolds and carries on! Yet, regardless of some unlovely characteristics, she does make a good home for her own family; and we love her for her sauciness and her glorious song. How one little tiny speck of life can produce such a volume of joyousness is always a source of wonderment!

The lessons in homemaking learned from my neighbors are that the type of house or the methods of housekeeping seem to matter very little if in the final result each family has worked out its own problems in its own way. The father and the mother work together. They share equally the work and the play; they raise fine families, and all the time they are doing it they sing. There never seems to be any sense of self-pity or martyrdom. It is their joyous acceptance of their jobs that makes them examples for us to follow.

In this work of homemaking there is much that may be distasteful. I don't like to wash dishes or to dust any better than you do. I had just as soon sweep a whole house, but how I wish it weren't necessary to dust afterward! I wouldn't mind doing any amount of baking if I didn't have to clean up the mess it involves. I'll admit there are many phases we would eliminate if we could. I once heard a woman say, "I can do a whole washing, but I don't have to get into the wash-tub while I am doing it," meaning that she did not have to keep her thoughts in the wash-tub. It

isn't the thing we do that counts; it is what we think while we are doing it that makes or mars our happiness.

I once knew a lovely Quaker girl whom everyone loved. Betty, though it was most un-Quakerish, loved pretty things. When she was graduated from high school her parents gave her a diamond ring and oh, how Betty reveled in the beauty of it! But she was never seen wearing it. One of her friends asked her why. She said that she could not bear to wear it out among the other girls because she knew she was the only one who had such a ring and she did not want to make them feel envious. "But," she said, "I do wear it once a week. Every Saturday morning I have to get down on my hands and knees and scrub the kitchen floor, and how I hate that job! So, I always put on my diamond then and just keep thinking, 'Little diamond, if you can come out of this sparkling and beautiful, so can I.' "

No matter what vocation you choose to follow you will find a certain amount of drudgery of one kind or another connected with it. Knowing this, we might as well be good sports and learn to rise above whatever may be unpleasant.

Regardless of all the tasks I do not wholly enjoy, I'd rather be a homemaker than to follow any other career, business, or profession. I consider it the greatest vocation because it embraces all vocations. To be a successful homemaker one has to be everything from a barber to a poet. One needs to have the meekness of Moses, the patience of Job, and the wisdom of Solomon! One should know not only the technic of cooking, sewing, and housecleaning but should also be an expert shopper, a nurse, a teacher, a lawyer, an artist, a financier, a policeman, and an encyclopedia. One should know how to play as well as to work, and above all how to be gracious when the unexpected happens. There is no profession which so challenges all one's mental ability and which so constantly draws on one's ingenuity and resourcefulness.

You all remember the old nursery rhyme:

> Curly locks! Curly locks, wilt thou be mine?
> Thou shalt not wash dishes nor yet feed the swine,
> But sit on a cushion and sew a fine seam,
> And feed upon strawberries, sugar, and cream.

The young man who thus proposed to his lady-love was downright stupid! Who wants to "sew a fine seam" and eat strawberries all her life? Better to be the old woman who lived in a shoe and had so many children she didn't know what to do! At least she would never die of boredom.

Today there is no excuse for any "old woman" or any young woman not knowing what to do under most ordinary circumstances of homemaking. People are beginning to realize that one should study and prepare for this vocation as well as for any other. In my own life, the two greatest assets I had as preparation for homemaking were my mother's example as a homemaker, and the training I received in preparing to teach kindergarten. I am sorry that I did not have the privilege of taking courses in home economics, for I know they would have saved me much grief.

Why is it that in this school 950 girls are taking commercial courses and only 450 household arts? Perhaps it is because you feel that you can learn all you want to know along that line at home. Possibly you can, but do you? I grant that your foundation work in homemaking should be learned there and that your mother should be your first teacher. But how many of you are willing to be taught, and how many mothers make it their business to teach you? If the training you receive at home is supplemented by a systematic course of training at school, you will be much better equipped to enter this most important of all vocations.

If you are planning a business or a professional career, this training will carry over into whatever line of endeavor you may enter before homemaking comes into your lives. Whatever skills you may acquire, whatever qualities of responsibility, resourcefulness, and womanliness you may develop from home economics study are bound to make you more valuable members of any business organization. Then, when the question of "marriage or a career?" presents itself, you will have some fundamental knowledge which will help you to answer that question. It may help you to realize that proper homemaking and intelligent parenthood are of themselves the most soul-satisfying of careers.

Moreover, no matter what subjects you may study in school or college, all have some relation to the vocation of homemaking. The richer and fuller you fill your lives with interesting thoughts and pursuits, the more you will have to bring into your home atmosphere. How often you hear someone say, "Just think of the years Mary has spent going to college or studying music and the money her parents have spent educating her, and now she's going to be married!" Just as if that were time, money, and talent wasted! Such remarks are without thought. Mary will be an infinitely more intelligent, more delightful homemaker because she brings to her home this added richness of experience. If you have talents or hobbies, develop these to the utmost, and they will supply resources within yourselves which will serve you well if monotony of housekeeping threatens. And last, but far from least, encourage your sense of humor.

In the letter which invited me to speak on this subject, I was asked to stress "salary and chances of promotion." To me the "salary and chances of promotion" are the very best part of this job of homemaking.

That word "salary" is very interesting. It is of Latin origin and really means "salt money"—the money given a Roman soldier for salt, as a part of his pay. The homemaker "worth her salt," may receive recompenses and compensations greater than those from any other kind of work, although in different coinage. May I illustrate this point with a very personal incident? Recently, as I was returning from a day of shopping, I wished I didn't have to think about food for dinner. When I opened the door, the first thing I saw was an enormous bag of groceries right in the middle of the living room floor. On the side of the bag, left there by my husband, were scrawled these words, "Meat, new potatoes, lettuce, asparagus, love." They symbolized much in the art of homemaking. All mixed up with the groceries, the preparing of meals, the house cleaning, and the caring for children, is that something called love. It is that upon which home and homemaking is built; and, as Drummond tells us, it is "the greatest thing in the world." To live to express love in all our home relations will bring its rich reward of joy and happiness.

As for "chances of promotion," the right kind of a home has chances to promote everything that is good and worth while within itself and within its community; and its influence can reach to the uttermost parts of the earth to help promote peace and harmony among men and nations. A woman who has been married forty years speaks in the *Ladies' Home Journal* of successful homemaking as "so building yourself and family into the community in which you live that your home is a recognized factor in constructive living; not because you and your family are prominent, but because you and your family are living happy, useful lives." Is there any vocation which has a more worthy objective?

AN INTEGRATED PROGRAM FOR RURAL SCHOOLS[1]

C. C. SWAIN

President, State Teachers College, Mayville, North Dakota

THE organized teaching profession has played a conspicuous part in an attempt to bring better educational opportunities to the country child. If the profession appears to have accomplished very little it is because the cards are stacked against the boys and girls of the countryside, and much of our talk has, therefore, been but the elaboration of the obvious. We have tried to purify the water by painting the pump; this cannot be done.

Two basic problems must be solved before our ideals for rural child welfare can be carried into practice. In the first place, greater economic justice must come to the farmer. A sound educational policy can rest only upon a sound fiscal policy. Not only must the farmer be able to earn a reasonable income, but his schools must be financed in a defensible manner. In a small district, our present property tax holds neither hope nor justice for the support of rural schools. As the school to which the workingman's child goes, is financed by the wealth of the city, so the farmer's school should be financed, in part at least, by the wealth of his state and his nation, a wealth that he and his family have helped to accumulate. In North Dakota, 86 per cent of the money for the support of rural schools is raised locally. It should be patent to all that when the farmer does not receive a reasonable income from his labor and when his schools get practically no assistance from outside sources, it is futile to talk about a square deal for rural education. The solution of this economic problem, both as to income and distribution of the burden, is the first prerequisite to progress. This solution must come from real statesmen—not from politicians.

In the second place, the public in general as well as the teaching profession needs to become intelligent concerning the importance of the country life problem. We must get people to understand that as rural

[1] Based jointly on a paper read at the Los Angeles meeting of the National Education Association, July 2, 1931: "The Organized Teaching Profession and the Rural Child," presented at the First National Conference on Rural Education; and a stenographic report of an address presented before the Department of Supervisors and Teachers of Home Economics.

civilization goes, so goes world betterment; that the farmer is legatee of all progress. Let the present situation continue, and we shall not go to the farmer to help him, but rather that he may save us. Only when this fact becomes a real conviction will educators tackle the problem with a determination that will spell success. In the belief, however, that this time is not far off, the following means are suggested, whereby the teaching profession may help the rural child. We must secure legislation placing the rural teacher on a par with our best elementary teachers as to training, professional status, social recognition, and tenure and secure specialized training in teachers colleges for all rural teachers. We may need to pound away at some of the teachers college presidents until they accept rural training from choice and not compulsion. In this connection, it is well to remember that the rural teacher's training should be broad. She should feel at home in the presence of culture and refinement as does no other teacher.

We must accept the rural teacher into full fellowship in all education associations and secure more complete cooperation between city and rural schools. Let qualified superintendents assist in rural school administration and supervision. We must send some of the superior teachers into rural schools rather than rob these schools of their most successful teachers.

We must continue our work in research. Just now we should have a fund appropriated by Congress for a comprehensive study of rural education and welfare.

We must develop a greater faith in the one-teacher school. Let us see that even this institution has great inherent strength that can be utilized.

We must build so vital a curriculum for the rural school that not only elementary education but a sound secondary school training is made available to the rural child everywhere.

We may thus assist in bringing about a realization of the objectives so well set forth by the White House Conference.

With the general situation then in mind, home economics teachers and supervisors may well be reminded that successful education is a matter of cooperation.

It has been said, "There is no wealth but life," and if we can get a vision of what education can really do for the life of the individual and society—the really fundamental objective in education—then various educational departments and divisions will not be so very far apart in methods and in means of carrying these ideals into practice.

If education may be sensed as the development of the human soul, I know of no department that may play a larger part in this development than homemaking education. The purpose of education is to get young men and women to fall in love, and I know of no other department in school work where there is greater opportunity to help boys and girls to fall in love—in love with neatness, beauty, cleanliness, and the other qualities that make for well-ordered living. To get a young boy (or girl) to fall in love with neatness is not always easy. You people know from sad experience that you may teach a child in season and out of season and still see no evidence that he has absorbed the ideal.

I have two quotations that I give no matter to whom I speak. One is, "The human soul absorbs its environment." Would that the rural teacher might grasp the significance of that statement in her effort to inspire and train boys and girls for a more abundant life. Leaders in home economics may play an important rôle in seeing that the rural teacher of the future is attractive personally and fully appreciates the influence of a well-ordered environment whether at home or at school. The teacher who stands before small boys and girls in the rural classroom should be good-looking, healthy, capable, in love with her work, open-minded, and enthusiastic about life. This is good home economics.

I remember a rural school which, in earlier years, I visited very often, and this school was always unkept, whether in summer, winter, spring, or fall. Pencil shavings were on the floor, half-eaten doughnuts on the desks, cobwebs everywhere—a sort of a down-and-out situation. The worst part of it was not that the boys and girls lived in that atmosphere but that they felt at home in that environment. It makes no difference how well we teach; if children live in such environment they will never reach their finest development. Hence, every teacher should be good-looking and a good housekeeper. No individual could study home economics without becoming a better housekeeper; therefore, all teachers might profit by such study, coupled with constant emphasis on my quoted phrase, "The human soul absorbs its environment."

"We perish by permissible things" is my second quotation. How frequently by just taking thought, the homemaker could make her home more attractive, more useful, more conducive to that larger life. It seems to me that before we can talk about any phase of technical education, we must have an ideal of what it can do for our boys and girls. Education for homemaking may get them to fall in love with everyday things that are good and that make life large. The rural teacher should go out into her school with that ideal. I am thinking of a one-teacher

school. There are all sorts of one-teacher schools, but a definition frequently used is: "A rural school is a little building on a little hillside where a little teacher for little wages for a little time teaches little children in a little way." Think of a small building, not very attractive. Think of a teacher who has had about a year of training beyond a high school. Picture a group of about fifteen boys and girls ranging from six to sixteen years of age, from kindergarten to the eighth grade. This teacher has about fifteen minutes for the average recitation that they have in the country school. Our pioneers, the builders of our rural schools, went out to the frontier that they might have better homes, better schools, finer churches, and better opportunities for their boys and girls. Fundamentally, they wanted for their children a more abundant life—a better place in which to live. They followed an ideal. Man's great struggles, as you know, are for livelihood and ideals. Those pioneers had to struggle hard for theirs, but out of that struggle came fine character and strong physique. In this thought lie great possibilities for rural education. Out of inevitable hardships and mastered struggles is born strength, and not only should the rural school give to her boys and girls fine ideals, but she should also help them to healthful, efficient modes of life. In all this, the home plays an important, specific part.

There are two fundamentals in education: society and the individual. If home economics work in rural education is to function, we must have a knowledge of what country life really is. We must not only know the homes from which the boys and girls come, but help them glimpse in their souls a more ideal home which they might go out and build. The rural school program should be based both upon the needs of society and the needs of the individual. The individual must grow, and he should grow not only in technical ability but in character and attitudes and ambitions. These schools cannot offer a real program unless all the subjects are shot through and through with genuine living. The small rural school needs first a teacher who has a vision of what education really means.

In the second place, the child must be offered the benefit of a well-rounded program, two or three phases of which have been suggested here. Educational leaders must know more of rural life. There is little place in the rural school for the teacher with purely technical training. The teacher-training institutions must accept responsibility for seeing that the rural teacher goes out with an ideal in reference to life, and with an understanding that each subject must play a part in building for better homes and finer living. A great deal of help may

come to her from home economics study and training. She must also see her unique opportunity. If she will teach all subjects with an ideal in mind as to what a home should and can be, these boys and girls are apt to grasp through her guidance the fundamental end in education.

May I close as I began by emphasizing the need of cooperation and a vision of what education really means. All educational groups must think, plan, and work together. Ours is a profession working for the child. It must strengthen the heart of our rural people to know that a group such as the organization of home economics teachers is also mindful of opportunities to be of service. Perhaps the greatest hope we have for the country school is that all organized teachers of America are saying, "We are going to solve this problem."

HOMEMAKING IN RURAL SCHOOLS

That teachers and supervisors of home economics in centralized rural or small town schools have sensed their responsibility in terms of genuine living is shown clearly by the accompanying descriptions of homemaking plans and projects. In these communities, pupils, parents, and teachers would seem to think, work, and plan together.

HOME ECONOMICS EDUCATION IN THE RURAL COMMUNITY[1]

MAUDE I. MURCHIE

Chief, Bureau of Homemaking Education, State Department of Education, Sacramento, California

Home economics education makes a definite contribution to the solution of the problems confronting society in the establishment and maintenance of suitable standards for home and family life. The school as a social institution must serve the home and community in specific ways to build up desirable standards, attitudes, and practices for wholesome living. The home economics teacher is in an enviable position for participation in this distinctly social program.

Modern curricula must provide for the development of boys and girls through emphasis on wholesome home and community activities in which they normally engage. This means a broader scope of homemaking training than is commonly provided. The tendency is reflected through the introduction into the old curricula of units dealing with child development and social relationships.

The State of California recognizes a major in homemaking (30 credits) as meeting one of the two required majors for graduation from rural high schools. The major signifies a mastery of the home economics field in so far as it may be accomplished in such time. Therefore, a breadth of homemaking subject matter is prescribed, although elasticity for adaptation to personal interests and needs is permitted.

There is a decided immediate need to bring the school into closer relationship to the home. Home practices and home projects under home

[1] Address given before the Los Angeles meeting of the Department of Supervisors and Teachers of Home Economics, National Education Association, July 2, 1931.

and school guidance are valuable in bringing this about. The teacher with vision and understanding sees this opportunity not as a method of instruction to motivate the traditional course content but as an opportunity to find about her the subject matter which the school should offer and to know how it should be treated to serve best the boys and girls of the community.

A definite program is being promoted in the rural communities of California to help establish more wholesome relationship between the school and the home. Liberal reimbursement is made under the provisions of federal and state vocational education acts to school districts providing for the supervision of home and school projects.

Preparation for efficiency in the future is not neglected because boys and girls are given opportunity to exercise in their everyday home and community activities such traits as are apt to be needed in later life.

Ideally, the rural school should be so organized as to assure to every child before he graduates or "drops out" a purposeful, unified course in training for home life. Such a program would also provide for individual needs and capacities. The relation of the curriculum-offering to the probable period of school attendance for a large number of pupils has been given very little practical recognition with the result that a very large percentage of our youth leave our schools after completing only a part of a program and that poorly adapted to meet their needs.

It is apparent, then, that the home economics teacher of a rural community must know the homes in her community and must accept them as a basis for determining what contributions she will attempt to make to that community through her curriculum. Her attitudes, standards, and practices must be kept on the appreciation levels of the community. The teacher must measure the success of her program by evidence of changed attitudes and habits of the students in their personal relationships to their home and other associates; by evidence of improvement in standards of home and school performance; and by evidence of their ability under her guidance to locate, define, and attack their personal and home problems.

A UNIT IN FURNISHING AND CARE OF THE HOME

MILDRED PETTES

Delavan High School, Delavan, Minnesota

A unit in furnishing and care of the home was introduced in the Delavan High School by asking what the girls themselves would like to do in this connection. That the group had been discussing this unit very carefully among themselves appeared when one of them instantly said, "We would like to know if there is some particular room in our school which we could actually furnish."

The next question brought out the fact that the group had a definite room in mind, for another girl quickly raised her hand and suggested a small room on the second floor which at one time had been an athletic dressing room and now was a useless store room. A third suggested that if we could get permission to use the room we might make it into a rest-room. This brought real enthusiasm to the girls' faces. Before the class met again, the superintendent had been interviewed and the good news rapidly spread that we could have the room for the purpose suggested. While enthusiasm ran high, the question of money was raised, a question frequently presenting real difficulty in the small school. For a few minutes everyone was thinking, and thinking hard. However, before long a member of the Home Economics Club (which had been organized the fall before) suggested that the Club take responsibility for the financial part of the program. Within a few days, plans regarding the rest-room were well under way.

The girls mapped out a program which would cover six weeks of study and involved work which could be definitely applied to the room under consideration. The relative merits were studied of different ways and means of ventilating, lighting, and heating rooms and buildings in general and this room in particular. Such floor and wall coverings as paints, varnishes, kalsomines, and wall papers were discussed pro and con. Desirable color combinations were analyzed in regard to use, location, and size of rooms, as well as pleasing color combinations obtained through control of hue, value, and intensity. Various structural and decorative designs were critically studied to fix principles for achieving beauty through the use of harmony, proportion, balance, rhythm, and emphasis in design. These principles were also applied to a limited, critical study of furniture, curtains, rugs, and accessories. Committee reports were prepared on the cost of available equipment varying in

suitability, design, color, and price. Special study was made of day-beds, tables, chairs, curtains, sheets and blankets, covering for day-beds, lamps, and pictures. Other groups presented possible plans for such arrangement of furniture and location of rugs as would give the room maximum beauty and usefulness. Consideration centered in suitability, orderly design, arrangements which followed the lines of the room, and balance.

After the study of each phase of work, momentous decisions were made by the group, and tasks were performed accordingly. The result is a very pleasing and attractive room. Soft ivory-white predominates, with a blending of light green to give a restful but cheery atmosphere. Green curtains with touches of orange and black give accent and charm to the room. On the day-bed is a cover of denim designed of Colonial pattern, not outstanding in color, but enough to give the room a quaint note. The girls fortunately obtained an old but sturdy table and a comfortable chair, which they painted in the same color scheme. A braided rag rug at the side of the day-bed is in green, yellow, orange, and black, with the colors used in lovely proportions. The accessories for the room are to be added little by little, as those which seem useful and appropriate can be found in harmony with the present scheme of finishing and furnishing.

As a result of this work, the girls are most enthusiastic to make and carry out plans for redecorating different rooms in their own homes.

CARING FOR LITTLE CHILDREN IN A HOMEMAKING CLASS

EVA A. WOOLSEY

Yuma Union High School, Yuma, Colorado

A class in homemaking in the Yuma Union High School, Yuma, Colorado, desired quite sincerely to know more about caring for children than could be learned from books and discussion. However, except for observing methods used by the primary teachers in regular classroom work, they found little or no dependable opportunity for first-hand study of the small child.

To help meet the situation a plan was developed, in cooperation with willing parents, through which during a six-weeks' period a number of preschool children were brought to the high school for the afternoon session (from 12.40 to 2.10) each Monday, Tuesday, and Wednesday. Girls who went home regularly for lunch brought some of the children, and a girl who drove a car to school called for the rest.

Before the experiment started, desirable procedures and objectives were generously considered in class discussion; a schedule was developed; and class objectives were set up. In the final making of the schedule, time was apportioned for removing and hanging away the outer garments of the children, as well as for putting them on again in preparation for departure. Other activities regularly listed were the news circle, finger plays, story telling, dramatization, group games involving big muscles, and free play.

Through participation in directing a group of small children so engaged, the high school girls hoped not only to learn how to keep the preschool child happy during a two-hour play period, but also to find out more of the interests and attitudes of the small child and to study such evidence of his mental, physical, and social development as could be had from so limited an opportunity. They hoped to develop enough judgment in directing activities of the preschool child to know when to help him and when to let him alone. They wished to study ways and means of assisting the children in the formation of good habits. They wanted to develop in themselves a finer appreciation for stories, games, and plays which appeal to small children, and to gain some ability in presenting them to a group of youngsters in such a way as to stimulate interest and draw a ready response. They hoped, finally, to gain something of an appreciation for the educational value of play in the life of the small child.

Real problems arose from week to week which furnished the basis of class discussion during this time. Some of the children had attended Sunday school or vacation school, and some had never before been away from their parents for any length of time. How were both groups to be kept happy during the first few days? How did small children get acquainted most readily? A special way had to be found for persuading Wayne, a timid child, to allow Geraldine, the high school girl who brought him, to leave his side. Caroline-May became so excited when she played with the group that she shrieked and screamed in near-hysteria. She also was skilled in side-tracking the interest during the story-telling period from the story proper to her own experiences. Had she already had too much attention at home? If so, how could she be helped to forget herself and enter wholeheartedly into the activity of the group? Bobby, aged three, received so much help from his older sister, Betty, aged five, that he was dependent upon her, and she was weighed down with responsibility for him. How could this experience help to emancipate both children? Such grammar as Marguerite used was all wrong. Could our correct usage be made attractive or emphatic enough to offset her poor start?

Class discussion of such problems, coupled with the immediate need for action, gave these high school girls a new appreciation for the problems of childhood and the part the homemaker plays in their solution.

The project was so organized that all were assured equal opportunity to study and direct the preschool group. By putting the responsibility for this organization into the hands of committees from the homemaking class, the executive ability of various girls was successfully tested and responsibility for the success of the experiment was well distributed.

Nor did the enthusiasm which the experiment created limit itself to the teacher, the children, this homemaking class, and the parents. A second class in the home economics department became actively interested in the play of children. Of twenty-one girls in this second class, five had brothers and sisters under ten years of age, and six others had earned money for school supplies by taking care of children in the evenings and on holidays. Christmas was approaching, and the stores had begun to display children's toys. The class and teacher talked the situation over and decided it would be fun to find out what kind of games and stories seemed to interest the small child in this community, and what kind of toys benefit as well as please small children. In addition, each girl was to entertain one child, or more, for at least one afternoon with stories or games which seemed to have educational value, and

report her experience to the class. Finally, each was to select or construct a toy for the Christmas gift of a particular child. These toys were to be exhibited in class, at which time the girl responsible for each would report on the basis of selection, the cost, and (if she had made the toy) the processes of construction.

In order to come to some conclusion concerning the best kind of winter playthings for the preschool child, brothers or sisters or the children of neighbors were to be carefully observed, advertisements of toys were to be clipped from magazines and brought before the class for critical consideration not only of the toys but also of the logic and psychology back of points brought out in selling them. Samples of toys from local stores were also critically studied in this "search for truth."

The stores in the locality reported to us that many more inexpensive than expensive toys were sold. The class decided to develop a score card for toys adapted to the preschool child. As a basis for this, they observed children at play whenever possible and talked with mothers regarding the life of toys, their relative cost, and long-term popularity. Paralleling this study of qualities which go to make up good toys for children, the class brought suggestions for the making of new toys and the repair of broken ones. The making of oil-cloth and cloth Peter rabbits, poodle dogs, baby and clown dolls, scrapbooks, and school bags was a popular project offering opportunity for free play of the imagination and creative genius. Dresses for dolls were equally popular, and repair kits and paint buckets were much in evidence. One roller skate and a few boards made a "skooter" that could accommodate one guest as well as the operator.

The score-card idea had become so popular by this time that the class developed one for judging desirable stories. Children from the preschool experimental group were borrowed from time to time to give an audience, and some of the stories which scored high were put to test as was the ability of each "teller." The entire class judged these demonstrations and attempted to analyze the different situations which made for varying degrees of success. It may have been a streak of conceit which helped the author to note an increase in attendance at evening functions throughout the rest of the year on the part of the parents of small children, or it may have been pride born of first-hand knowledge which helped her to read into their exchange of greetings a new note of gratitude for care-free evening hours made possible by warranted faith in the temporary guardians of the children left at home.

CHILD CARE AMONG HIGH SCHOOL GIRLS

THELMA GRAVES

Ramer High School, Ramer, Alabama

Classroom instruction, home practice, and special project work have combined to stimulate among the Ramer High School girls a sincere interest in the welfare of children; and many are developing real ability for training children in their homes.

Last year, in order to study children for evidence of beginnings in health habits, a health class in the home economics department decided to spend several mornings observing the primary grades at the elementary school. They arranged with the primary teachers to assist with the opening exercises and recreation periods, and with this in mind familiarized themselves with stories and games which might interest the children. These visits gave them valuable information and experience.

The information obtained by the health class was reported to another class to stimulate there an interest in child care and training. The members of this class in turn studied the smaller children in their own homes to see if the habits they were acquiring were conducive to the best development. Recreation for children proved a popular study, and as a result toys and books were collected and classified according to probable age appeal. The high school group learned games and stories for various ages, and some of the girls tried these on children at home. The reported results brought real problems in child development into class discussion, and frequently leading questions were asked concerning methods of training infants and very young children at home.

The girls of this class continued to show an interest in younger children in their clothing work. They learned that several children in the elementary school needed clothing and promptly made them some from cast-off garments. When the little girls came down to try on their dresses and coats, the high school girls suggested to them some simple rules for the care of clothing.

Special child care projects were also undertaken by individuals. For example, Katherine has no younger brothers or sisters. She lives with her sister and is very much interested in the development of her niece, Quida. She has studied children's books and is beginning to collect a library for Quida, she and other members of the family to give the child these books on her birthdays and at Christmas. She has instituted a story hour, during which Quida often tells stories to the family. A small

unused room was cleaned out, and Quida's toys were moved in so that now she may play there on rainy days. Katherine arranged a storage place for Quida's clothing, and now the child helps in putting it away. Quida also has learned to help with other small tasks about the home and to take her share of home responsibility. Proper habits, especially those pertaining to health, have also had special attention.

One girl has undertaken to teach her younger brother and sister table etiquette. The other day she said, "You know I am glad I selected the project I did for I am teaching myself a lot." We found also that she thought the table manners of the children were already improving.

In one of the foods classes, interest in child development was created through preparing food for children. The Red Cross had asked us to make cookies for children who needed food. They had a supply of currants that had been sent to American children by children of Greece, and these we planned to use in the cookies. Through this lesson, we led into our unit on the feeding of children. Later, when we were planning to prepare a child's dinner, one girl said, "It would be more interesting if we had some children to eat this food." We accordingly invited some children of preschool age to dinner. This visit gave the members of the class an opportunity to casually observe a few children, and it was amazing to discover how much they had noticed in one short visit.

Later, the home economics department was asked to develop a chapel program. It was decided that a selected cast would pretend they were mothers who were going to hear a lecture given by a child care specialist. Many questions were asked by these pseudo-mothers concerning the training of children for proper food and general health habits. The ingenuity of the "special lecturer" was sorely taxed. After the "lecture" they presented, with the assistance of two small children, a daily routine desirable for the young child.

Some mothers have promised the members of this class that next year they may have real children at school long enough to test some of the theories learned during their unit on child development. The boys of the manual training class have also promised to make some toys and prepare a playground for the children. One girl naïvely remarked, "It is not difficult to have well-developed children, is it? It takes only a little patience, interest, and work to make them good and happy."

SIGNS OF THE TIMES

THE HOMEMAKING DEPARTMENT BUDGET. During the past two years, one of the objectives of the bureau of home economics of the New York State Education Department has been to interest administrators and teachers in establishing their homemaking departments upon a budget basis. The organization of a budget system is based on the theory that in order to operate and maintain a homemaking department satisfactorily it is essential to have a definite knowledge of the amount of money which may be allowed for expenditure each year and to keep an accurate account of all money expended.

In order to give available concrete assistance to these administrators and teachers, a suggested budget procedure was formulated by this bureau which makes provision for capital outlay, maintenance, and operation. It covers a period of three years so that definite plans may be made to meet the needs for yearly expenditures for these three items.

Through news letters, school visits, and conferences, information in regard to the budget is sent each year to teachers and principals in schools where homemaking departments are already established. In cases where new departments are being organized, this information is sent to administrators with other definite schemes for department organization, and the budget is accepted by them as an essential and integral part of their organization. If the teacher has already been appointed to one of these new positions at the time the information is sent, the responsibility for a specific budget for her department rests upon her. If this appointment has not been made, this bureau assumes responsibility for a tentative plan.

In giving assistance to teachers the following points are suggested:

I. If you have not already worked out a budget plan for your department, will you consider the following procedure and evaluate it in the light of your situation? If, after careful study, you think there is some reason why such a plan is not feasible in your school, will you please write to this bureau outlining your situation? Otherwise, will you follow the suggestions and make out a budget plan for your department?

A. Make a careful survey of your situation and take account of all assets and liabilities pertaining to equipment, maintenance, and operation.

B. Make a plan for the next three years, listing all needs for equipment and furnishings for maintenance not included in the general school budget, and for operating expenses. (Estimate costs)

A suggested form for budget use follows:

1. 1931–32
   a. Capital outlay (itemized list of equipment and furnishings with estimated costs)
   b. Maintenance (upkeep on furnishings and equipment, replacement of worn out and broken equipment)
   c. Operating expenses (food, fuel, laundry, supplies for all classes)
2. 1932–33
   Same procedure
3. 1933–34
   Same procedure

C. If you wish to have this plan checked, send it to this bureau. We will be glad to criticize it for you and assist you.

D. When you have worked the plan out in a clear, concise form, discuss it with your principal and ask for his reaction to it and his suggestions for revision.

E. If your principal approves of the idea, ask him to present it to the Board of Education for consideration and approval.

F. For the next three years keep an accurate account of your expenses and check with the budget plan.

II. We will welcome an opportunity to discuss the budget plan with you and to help you with the details of planning and execution. A detailed form sheet for making out the budget will be sent to you upon request.

Experience has shown that expenditures for capital outlay tend to decrease each year after the department has been newly organized but that those for maintenance and operation tend to increase, due to additional registration. When a new department is being organized, the bureau works directly with the architect as well as with the school administrators so that equipment may be as effective and as economical as possible. Naturally, the expenditure estimate must be merely tentative until after the department has been operating for one year. After that time, the teacher can base her estimate upon previous experience.

Although it will take a number of years to thoroughly establish the budget system in all homemaking departments in this State, the results up to date have been gratifying. Rather than forcing it as a predetermined policy of this bureau, an attempt has been made to offer it as a possible procedure for increased efficiency, giving Boards of Education and principals an opportunity to evaluate it in relation to their own situation. As a result, it has proven to be an idea which most administrators

have been willing to put into effect and they, with the teachers and architects, have given it excellent support.

Four desirable results are outstanding: recognition by school administrators that the homemaking departments are an important factor in the school program, increased efficiency in department operation, more adequate and better equipment, and greater opportunity for the teacher to build up a progressive homemaking program.—MARGARET HUTCHINS, *Home Economics Education Bureau, State Educational Department, Albany New York.*

THE HOME ECONOMICS TEACHER AND SCHOOL HANDWASHING. The home economics teacher is in a strategic position to improve sanitary practices in school. Findings of a study of school handwashing made by Cleanliness Institute indicate that few of the nation's 26,000,000 school children are washing their hands regularly after toilet and before eating.

During the study—made in 15 states by visiting 145 schools of varied types with an enrollment of 124,000—it was found that less than one third of the schools are providing, for general use, all three essentials to satisfactory handwashing—water, soap, and drying equipment. Moreover, where the three facilities are in the same school, usually there is too little warm water, the towel supply is soon exhausted, or the soap is all used early in the day.

Even in those rare schools where facilities are ample, only a few children are using them. Sometimes the school program is at fault—children simply do not have time to wash hands. Sometimes the lavatories are inconveniently placed in relation to classrooms, lunch rooms, and toilets. Sometimes teachers have failed to stress the health and good manners' values of clean hands.

All that is regrettable. But why, may come the query, should the home economics teacher concern herself? Because both her insight and opportunities are usually greater than those of the other teachers.

Clean hands constitute a first principle in sanitary food handling. Health is a major responsibility of food experts, and one of the essentials to healthful, safe food is that it should be clean. It is not, therefore, surprising to find the cooking class students washing hands—at their teachers' instigation—often enough to satisfy the demands of health and decency. As a matter-of-course part of the routine, hands are washed before each new class gets out kitchen equipment and begins work. If a

student leaves the classroom for any reason she washes hands upon her return before food or utensils are touched. Neither is it surprising to find that schools not equipped for general handwashing often have lavatory, soap, and towels in the home economics room.

But why prepare food carefully if the eater fails to keep—through failure to wash—the hand-to-mouth line of bacterial transmission unbroken? It is logical that the cleanliness responsibilities of the school's food expert should extend to the child consumer, whether or not the home economics department is in charge of the lunch room.

Handwashing procedures observed in several school cafeterias point out practical ways in which the home economics teacher—often an adviser to the lunch room manager even though not directly in charge—may improve school cleanliness practices.

One high school makes handwashing before lunch a regular part of the program. In the cafeteria itself, where the students must pass it before coming to the food counter, is a lavatory. Soap and paper towels are provided. A senior girl is stationed at the cafeteria door. She admits students in groups of ten, in order that hands may be washed without delay due to congestion about the basin. Another student monitor stands by the lavatory to insure speed.

In one city all the schools with cafeterias have placed washbasins in the lunch rooms, on the route the "lunch line" must take. A student monitor or adult is near to see that all the children actually do wash. Cleanly handling during the eating as well as during the preparation of food is considered so vital a part of the lunch room system here that soap and towels are purchased either with cafeteria supply money or else out of the proceeds from cafeteria sales.

The equipment need not, however, be in the lunch room. In a southern city where the health director has instituted the practice of handwashing before lunch in all the schools, the junior high school may serve to demonstrate how system, supervision, and "staggering" the lunch hour can make handwashing feasible, even though equipment is not all it might be. With only four washbowls, two in the girls' basement and two in the boys', all the 875 students manage to wash satisfactorily. They elect monitors to keep order in line, to see that soap is used in the washing, and to distribute towels and later the little colored bits of cardboard that serve as entrance tickets at the door of the lunch room. No one is allowed to eat unless he has the ticket to show that he has washed. The school is dismissed in two sections, and there is no trouble getting hands washed as fast as food can be served.

Compare this with another high school where the water equipment is exceptionally good. Ten basins, with hot and cold running water, are in the boys' washroom and ten in the girls', while various places in the building have additional lavatories. Yet washing is not done consistently. The home economics rooms are near the washroom and students of those classes are encouraged to wash on their way to class. However, they usually must do it without soap. So little attention is paid to the actual requirements of regular handwashing that though the enrollment is 1900, the janitor is given only 200 cakes of soap each year for the entire school! He follows instructions and cuts the cakes in half, putting pieces out periodically. The result is that the soap containers are empty most of the time.

Adequate handwashing in schools is a problem of equipment and supplies, to be sure, and often the home economics room has the only equipment in school. But first it is a problem of teacher interest. Ingenuity and enthusiasm can overcome handicaps. No group is better fitted to point out, to fellow teachers and administrators alike, the need for including handwashing in the school program than those who are particularly concerned with raising the standards of family life.—HELEN HAMILTON, *Cleanliness Institute, New York City.*

FLOOR MATERIALS FOR RESIDENCE HALLS. Floor materials for use in buildings devoted to group living have been modernized by the demand of architects for something to aid them in the esthetic aspect of their work, and by the public which called for quiet and the resilience that promotes comfort for those who work or stand long hours on the floor. For rooms designed for rest or for work, there are now many types of floor materials which do away with excessive noise, hard unyielding discomfort, and high maintenance cost without sacrificing artistic merit or incurring unusual expense.

These materials vary in their characteristics, quality, and expense. Floorings for residence halls are usually selected from manufactured materials such as linoleum; terrazzo, or composition; the many forms of domestic or imported tile; or from some varieties of wooden floors.

Linoleum, rubber-tile, and cork composition floors are especially adapted for use where noise is an undesirable factor. Linoleum is time-honored in its use and comes in various weights and many patterns. Since it is manufactured from a combination of ground cork and linseed oil, it is subject to rot from moisture and to cracking, warping, and dent-

ing. It may be used successfully in bedrooms and corridors, but must be avoided where there is grease, moisture, or the necessity for too-frequent washing. The best practice is to lay it in cement with a felt under-lining. The finished surface may be shellaced, or waxed, or shellaced and waxed. It is easily cleaned and, if properly laid and cared for, is a desirable floor covering.

Rubber-tile in imitation marble, terrazzo, or tile designs, is adapted to rooms where silence and durability are important factors. It is quickly cleaned and insures highly satisfactory results if excessive moisture can be avoided.

Another variety of manufactured flooring is asphalt tile, one-eighth of an inch thick, which may be used in place of linoleum. It is one of the more economical floor coverings.

Cement may be used where the appearance of the floor is not a factor, as in store-rooms for dry materials, garages, machine rooms, or similar spaces. Buildings of fire-proof construction generally utilize a one-inch thick concrete floor throughout, since it provides the cheapest under-floor construction consistent with safety. Occasionally, there are rooms or spaces in which colored cement is practical and satisfactory. The cost of laying colored cement flooring is approximately double the cost of plain cement.

As a variation from plain cement, magnesite is sometimes used as a binding agent in manufactured floorings. Magnesite is a chemical and not a cement. It may be used without the addition of other types of floor finishing materials such as marble, or it may be used in making one variety of terrazzo floors. Unlike cement, magnesite gives a non-slip surface and is, therefore, more commonly used in many rooms.

Terrazzo floors made from cement and crushed marble or from magnesite and crushed marble are superior to cement and are often desirable for bases and floors in some types of institutions. They are readily cleaned and are especially satisfactory in lobbies, lounges, and corridors.

In laying terrazzo or magnesite floors, it is customary to use brass strips laid on end between squares 12, 16, or 18 inches in size, or in a rectangular pattern. The possibilities of color combinations in such floors are varied and interesting, and their design may take its note from the architectural scheme or the taste of the decorator. Sometimes the main floor is made of alternate squares of cream Sierra marble and white with a darker cream border. In Colonial architecture the scheme may be black and white.

For most purposes, tile has superior merit at a reasonable cost as compared with other types of flooring, and should receive consideration where the element of noise need not be regarded. Since the demand for a

flooring combining practical and artistic merit has increased, there has been a striking development of new types and designs in floor tiles. These are combinations of clay, feldspar, and flint and are of both foreign and domestic manufacture. They are available in all gradations of surface, from the very smooth to the rough, non-slip. A complete range of standard sizes of tiles is manufactured, and they provide a durable floor, with low cost of upkeep and maintenance, combined with a distinctive appearance.

White tile is used frequently where corners may be dark, as in janitors' closets or around slop sinks. A tiled floor may be also used in combination with tile bases beneath high bath tubs, ranges, or similar fixtures.

Ceramic tile is the ordinary bathroom tile. To lay it in an interesting pattern costs no more than to have a plain design; it is not only more decorative, but has also the practical value of showing footprints or stains less than the plain.

An interesting and important type of flooring is the imported quarry tile, obtained in various sizes and kinds, including a non-slip tile. Some of these tiles are clear red in color, others are made with finely blended brown tones called heather tile. There are several other colors available in these floor tiles, and various patterns and colors have been especially designed for combination with tile wainscots. The imported quarry tiles are self-polishing over a period of years and require no care except simple scrubbing.

Wooden floors have been commonly used in the bedrooms of residence halls. These may be of hard pine, maple, or oak. If well-cared for, the wooden floor is always most home-like, but, while pleasing in appearance, is expensive in upkeep. The simple type used in such bedrooms is usually shellaced and must be kept waxed if the surface is to remain in good condition. Proper upkeep is often prohibitive in cost for the average institution, and these floors may thus become defaced and unattractive from lack of adequate care.

In living rooms, or other social rooms, the cost of proper maintenance for hardwood floors is frequently justified by the fine decorative effects to be secured by their use. In these rooms, domestic hardwood floors may be laid in ordinary fashion or in interesting parquetry designs with rich effect. Antique effects may be secured by the use of early Colonial or wide wood flooring in oak, pine, or maple, subjected to a darkening process at the mill or after laying.

In addition to the interesting variety of domestic hardwoods available for floor materials, there are foreign woods such as teak; French, Italian,

and Circassian walnut; English oak; mahogany; ebony; and holly. Some of these woods are used in the reproduction of Old English, French, or Flemish floors with marked success. While most of these foreign woods are too expensive for general use in the average institution, they are sometimes introduced where a special effect is sought.

In determining the floor material to be selected, it is expedient to consider the ultimate rather than the immediate cost; that is, the initial cost of the floor plus the cost of care and maintenance over a period of years. Thus computed, linoleum floors are as expensive as tile. Although they are more quiet, they are neither so sanitary nor so artistic. Wooden floors grow increasingly less adapted for practical use as compared with the tile, in spite of the beautiful effects which they may give. Terrazzo floors are in general more expensive and less artistic than tile. Being non-absorbent and quickly cleaned, tile is an almost ideal flooring for all general use throughout the main rooms of the residence hall. It provides a practical as well as a beautiful finish, to which little dirt adheres under any circumstances, and its glazed surface renders it impervious to moisture or acids. These factors should now be carefully weighed, since the last decade has brought a huge increase in the labor cost for the care and upkeep in the less durable and cheaper floor materials.

Although building costs may vary over the country, the following table of approximate floor costs when laid in an Eastern coast city may serve as a guide in making a tentative estimate, to be verified for any given locality.

APPROXIMATE COST PER SQUARE FOOT OF FLOORINGS LAID[1]

Linoleum, ⅛″ thick	$0.20
Cement, 1″ thick	.15 to .20
Colored cement	.30 to .40
Asphalt tile, ⅛″ thick	.19
Linoleum tile	.30
Rubber tile	.60
Terrazzo	1.40
Magnesite	1.40
Travatine	3.50
Domestic tile	1.00
Imported tile	1.25
Ceramic tile	.75
Plain oak, ⅛″ strip	.40
Maple, ⅛″ strip	.45
Yellow pine, combed grained, ⅛″ strip	.40
North Carolina pine, ⅛″ strip	.20
Parquet, ⅛″ strip	2.00 to 4.00

[1] Figures supplied by Arthur Ware of F. B. and A. Ware, Architects, New York City.

Floor materials are selected to provide beauty, permanence, ease and economy of upkeep, and correct sanitation. The wide variety of floorings available and the important new developments in manufactured types of materials to meet both the artistic and practical demands of architects and builders have had the effect of increasing the care exercised in the selection of floors in the original plan for the building.—ETTA H. HANDY, *New York City.*

THE NEW HOME ECONOMICS BUILDING AT THE UNIVERSITY OF MAINE. The home economics department of the University of Maine began its work this fall in Merrill Hall, a new building named for Dean Leon S. Merrill of the College of Agriculture. It was finished last January and dedicated, with completely new equipment, on October 10.

The exercises, at which Miss Cora Winchell spoke on "New Horizons in Home Economics," emphasized the fact that the building is the only one on the campus which houses, for a single subject matter field, the three divisions of the land-grant instititution, resident teaching, extension, and research. The belief was expressed that the arrangement would aid research in the selection of problems of importance and in securing connections in the field for those problems which should be studied where they occur, would vitalize resident teaching through contact of students and staff with research findings and methods on one hand and with homemakers' needs on the other, and would provide extension with easier access to sources of information and laboratory facilities.

The building was planned to meet the needs of a rapidly growing major department which has passed the first hundred mark, and to make possible, as the demand arises, elective work in homemaking, particularly in parent education, for the three hundred women in the arts course at the University. It is a three-story red brick structure, 125 x 50 feet in ground area, of Georgian Colonial architecture, harmonizing with other new buildings on the campus. It is arranged with a 30 x 50 laboratory wing at each end of each floor, and a center section containing classrooms, offices, corridors, stairs, and toilets.

The first floor houses in one wing the nursery school, with a private entrance and play ground, and in the other the institutional management laboratory. The nursery school quarters will permit the expansion, as need arises, of the play school which has been in operation for a short period of the year at the practice house. The institutional work is new

and will be begun by running a lunch room for the University faculty. On the first floor are also two classrooms, a conference room, and a small departmental library. Here, too, is an ornamental tiled drinking fountain of the wall-panel type, presented by students and alumnæ in appreciation of their training.

On the second floor, the north wing is devoted to four small laboratories for experiment station work, equipped at present for the study of household equipment, respiratory metabolism, and food and nutrition problems requiring chemical or biological analysis. The south wing is occupied by a food and dietetics laboratory, equipped for individual experimental work for twenty students, and also with five unit kitchens and serving space to provide meal preparation facilities for the same number. The equipment in this laboratory is all of the household type and is planned to give opportunity for comparative studies of fuels, stoves, and utensils in equipment and management classes. A student laboratory for household equipment on the same floor will, when equipped, make possible laboratory work in this field. Offices occupy the remainder of the second floor.

The north end of the third floor holds the design laboratory, for art and design principles, applied design, and house furnishing, and is balanced on the south by the clothing and textile laboratory for textile economics, clothing selection, and history of costume as well as clothing construction. Each is equipped for twenty students. The center section includes two classrooms which can be thrown into one for departmental meetings or Farm and Home Week, and the offices of the home economics extension staff.

The interior walls of the building are hard plaster painted a very light yellow taupe, while the standing finish is silver gray oak. Classrooms and clothing and design laboratories are furnished in oak of the same shade.

Since laboratories in other buildings on the campus give adequate provision for the science needs of students, and since a home management house is available, the new building appears to offer for the present very satisfactory housing and equipment for home economics work. Students and staff are beginning the year with the typical home economics aim of making material improvements subordinate but contributory to a spirit and a quality of work even finer than has been possible in the past. The Home Economics Club and the chapter of Omicron Nu, installed last spring, are helping to achieve this aim.—PEARL S. GREENE, *Head of the Home Economics Department, University of Maine, Orono.*

EDITORIAL

THE PRESIDENT'S CONFERENCE ON HOME BUILDING AND HOME OWNERSHIP. December 2 to 5, 1931, are the dates set for this Conference, at which the findings of some twenty-five committees, with over 500 members, will be presented, discussed, and used as the basis of recommendations for the improvement of homes and home life in this country. Despite the fact that the more social or sociological aspects of the subject are not specifically named in the title, all of President Hoover's public statements regarding it have shown definitely and clearly that the welfare of the home and the family as the unit of national life is at the core of the purpose which the conference is designed to serve. Home economists have had their special proof of this by the inclusion of the president of the American Home Economics Association on the original steering committee; by the fact that at least four of the Conference committees are concerned distinctly with problems of homemaking rather than those of construction, design, or finance; and by the appointment of home economists to represent the point of view of the homemakers on committees dealing with the technological and economic aspects of the subject. Home economists are also well represented on the so-called coordinating committee, whose function it is to correlate and bring into a coherent whole the diverse facts and recommendations which will be made by the individual committees.

Dr. Ford gave to members of the American Home Economics Association at Detroit and to the readers of the October JOURNAL the list of the committees and their chairmen, emphasizing the features of the program which are of special interest to home economists and homemakers in general. The committee on kitchens and work centers under Miss Abby Marlatt, the one on interior decoration under Miss Ruth Lyles Sparks, the one on household management under Miss Effie Raitt, the one on homemaking under Miss Martha Van Rensselaer, and the one on home information centers under Miss Pearl Chase, are about to hand in their reports as this is written. Between them, they should draw an authoritative, effective picture of the features of the house and its activities most generally associated with the idea of home economics. Miss Marlatt's committee has probably been looking primarily at what the Conference

tends to call technological problems, Miss Raitt's more particularly at their combination with economic considerations, while Miss Van Rensselaer's has presumably placed its emphasis on the sociological aspects of home and family life.

Our knowledge of the house as the center of family life has long needed to be enlarged, both on the technological and on the sociological sides. Equally, if not more, serious has been the frequent lack of consciousness on the part of each group of specialists of the problems of the others. The technologists, while accepting in theory the importance of the social aspects of the home, have not always made practical application of the theory in their consideration of what a home should be and do. The sociologists, in turn, have been inclined to emphasize underlying economic and social trends, often with an indifference to the immediate problems of home building and of adapting homes to the needs of individual families. The situation is in a way comparable to the one met by the White House Conference on Child Health and Protection, when health officers, pediatricians, psychologists, and educationalists found themthemselves attacking the central problem of child welfare from different directions. It is generally agreed that the White House Conference would have been worth while if it had done nothing more than make the various specialists conscious of the other fellow's place in the battle and the strategic importance of a joint plan of attack. Home economists, whose ammunition is supplied from so many sources and who are, so to speak, scattered through so many divisions, were probably especially conscious of the need of common action; and they already see much benefit coming to them from the better mutual understanding and closer relations.

If the President's Conference on Home Building and Home Ownership works out as its originators hope, home economics stands to profit by new sources of reliable information regarding all aspects of the home as the setting for family life; by a wider understanding on the part of the public of the particular contribution which home economics makes to this; and by a clearer conception of the many influences, technological and economic, social and personal, that must be brought to unite in a common purpose if we are to have the kind of homes in which American families can develop according to our best ideals for the individual and the nation. In short, the Conference should, in President Hoover's phrase, "give direction and coordination to thought and action throughout the country" in all that concerns better homes.

THE RURAL CHILD AND HIS SCHOOL. The White House Conference on Child Health and Protection would be "its own excuse for being" had it succeeded only in presenting to the world reliable statistics and summarized facts concerning certain educational institutions vital to the welfare of individuals and of society, though for the moment, so to speak, "out of the lime light." The rural school is one such institution.

One of the goals set by the Children's Charter is "For every rural child as satisfactory schooling and health services as for the city child and an extension to rural families of social, recreational, and cultural facilities." Review of committee reports helps to clarify the present situation. That sub-subcommittee making especial study of the preschool child reports:

> At the present time no adequate consideration is being given to the needs of the young child in rural areas. . . . It is hoped that analysis of the data which have been collected will assist in formulating a program for the education and training of the young rural child. Emphasis is placed on the importance of further investigation and the need of parental education in this field.

Likewise, those studying the promotion of health habits find:

> Most rural schools suffer from poverty and the isolation of their communities and need well-trained teachers before their health programs can be fundamentally improved. . . .
>
> They are privileged children who grow up on a farm. There is something about the creative responsibilities of agriculture and country life that makes for sound foundations. . . . .
>
> The isolation of the farm home limits the farm family in its recreational and social contacts both to the advantage and disadvantage of the farm boy and girl. . . . The rural youth is handicapped, too, in his school opportunities.

In line with this last thought, recent data from the Federal Office of Education have new significance. More than half of the children from rural homes in this country are still receiving their elementary work in one- or two-roomed isolated schools, and only 26 per cent of them are ever enrolled in high school. Moreover, in rural districts, the school year is from one to one-and-a-half months shorter than for the city schools.

The availability of public school education in rural communities and the smallness of America's rural high schools are shown by W. H. Gaumitz in a recent bulletin from the Federal Office of Education. The teaching profession may well blink and blush over his picture of the present qualifications of the rural teacher.

If all the teachers of one-teacher schools stood side by side, their ranks would extend in an unbroken line $87\frac{1}{10}$ miles. Assuming this army of teachers were arranged in such a way that the one having received the least amount of training stood at one end and the one having received the largest amount of training at the other, a person reviewing this company would find it necessary to walk a distance of $8\frac{1}{2}$ miles before coming to a teacher with a training equivalent to 2 years of high school.

One would have to walk half the entire distance before approaching a teacher with training equal to high school graduation, and would have to continue his walk for a total distance of $67\frac{1}{2}$ miles before reaching the first teacher with the equivalent of 2 years of normal school education. The jaunt would be continued to within 13 miles of the end of the line before one who had the equivalent of a college education would be reached.

Furthermore, this composite teacher meets 22 farm children for 162 days out of the year and is a woman 27 years of age who has totaled four years and one month of schooling above the grade school, had two years and six months experience in teaching, and earns $874 a year.

All available evidence seems to justify the generally accepted conclusion that the type and quality of education available in the rural community is greatly inferior to that provided in the city. Moreover, problems of non-attendance and early withdrawal are more acute and more likely to be readily dismissed by those who are responsible for their solution.

THE RURAL SCHOOLS AND EDUCATION FOR HOMEMAKING. Although at first glance the facts just cited may seem discouraging, closer scrutiny discloses many hopeful and promising aspects of the rural situation as it pertains to education in general and homemaking education in particular. If the promise is to be fulfilled, the rural homemaker and the rural teacher, typified by the previously described 27-year-old woman, must in many cases play important complementary rôles.

In order to bring about improvement in the rural school situation as rapidly as possible, Ohio is considering a plan which is attracting widespread interest. In fact the Federal Board for Vocational Education has recommended that all those responsible for the administration of rural education give it careful attention. The principal features of the Ohio plan are as follows: Second and third grade high schools are to be converted into junior high schools and no new high schools are to be built in non-urban localities. Each county is asked to survey the educational situation within its own borders and decide upon reorganizations and

relocations which will improve conditions without increasing the cost. Teacher-training institutions are urged to comply with definite suggestions given by the teacher-training division of the state department of education in the effort to avoid both dearth and oversupply of teachers trained to teach specific subjects under specific conditions. The state highway department is asked to cooperate in making available easy transportation to union schools or one-room centers. Lastly, an extensive survey of five counties is to be made and warranted experiments inaugurated in an effort to determine what general changes of policy should be ultimately adopted throughout the state.

The situation in the rural schools of Porto Rico deserves honorable mention. To children above the third grade they offer, in addition to the usual academic subjects, agriculture, home economics, and training in various trades to increase their earning capacity and enable them to lead more comfortable lives. The vocational courses include agriculture, animal husbandry, woodwork, house wiring, tinsmithing, auto mechanics, shoe repairing, hair cutting, clay work, and toy-making for boys; cooking, sewing, hand and machine embroidery, and lace-making for girls; and hand-weaving for all. Agriculture stresses home gardening; animal husbandry emphasizes the raising of pigs, chickens, rabbits, pigeons, and goats so that each farm home may supply its own meat and milk. Moreover, tables, chairs, beds, washboards, and ironing boards are made in carpentry classes.

Never before have social, recreational, and cultural facilities been so nearly within the reach of the rural population. An increasing number of pleasures are, in normal times, within the reach of adults and children in the small towns and open country. This tends to make doubly serious the attitudes and tastes displayed in such matters by parents and teachers and places upon them responsibility to see that the community centers are wholesome and that their own homes are inviting, comfortable, and attractive. The consolidated schools in whose favor 4,200 one-room schools are annually abandoned, undoubtedly help solve many of the difficulties which have in the past tormented the rural supervisor. It makes possible a diversified program and many extra curricular activities offered under the supervision of better paid and better trained teachers. Here, too, many effective health programs are already in operation, and through them traveling medical, dental, and mental hygiene clinics have rendered valuable service to entire communities. Standards of health, both physical and mental, which are impossible in many urban sections, may possibly be achieved in uncongested areas. Only children

who shuttle back and forth from home to school, in each of which someone is striving intelligently and cooperatively for an environment and program of living conducive to health, are adequately assured of health and all its benefits.

Although adequate social adjustment helps each individual to attain happiness and usefulness, he is also entitled to an educational experience conducive to the highest development of his peculiar capacities. Individualism flourishes least in large classes and under standard procedures, both of which are practically unavoidable in a large city school. Little wonder, then, that history shows a large percentage of our famous men and women to have been boys and girls upon the farm. One conclusion of the White House Conference was "That children of the farm family, working from the time they are old enough to bring in the firewood, feed the chickens and gather the eggs, receive a natural education which is without parallel." Small classes and socialized atmosphere in the school might as justly be included in the list.

In this issue, the problems of rural schools are again emphasized. Dr. C. C. Swain (pages 1007 to 1011) tells what he thinks a rural school should be and how the home economics teacher can help to attain it. Teachers in actual service describe efforts to work progressive educational ideas into the program of present-day rural schools (pages 1012 to 1020).

These accounts do not in the least suggest the typical old-fashioned, box-like, one-room school or the earlier factory-like village school. There is real joy in discovering for the first time one of the newer type. Much credit for this innovation goes to the late Fletcher B. Dresslar who, as federal specialist in school sanitation, succeeded in beautifying and making more useful many an isolated school. Marked improvement is apparent in the arrangement of windows and in provision for artificial light, in sanitary plumbing, in selecting better sites providing adequate play space and surroundings conducive to beautiful grounds. His bulletin "Rural Schoolhouses, School Grounds, and Their Equipment" gives helpful discussion of many phases of the problem, as well as ground plans and elevations for vocational buildings and for two- or three-room schools at the crossroads or facing north, south, east, and west. A plan is also presented for building the "teacherage," or the teacher's school home. Here the teacher may find comfortable living quarters in return for establishing a homemaking laboratory for the school; a social center for the community; and a club-house for the use of the parent-teacher association, rural extension classes, or boys' and girls' clubs. From it may radiate new standards of interior decoration, cleanliness, hospitality,

beauty, and home comfort. Home economists have long since been convinced that every girl should have scientific training in homemaking. In common with many other professional men and women, they are becoming increasingly alert to the realization that varied interests and abilities, peculiarly high standards and ideals, a vast store of common sense, and a strong love for and appreciation of humanity, plus general training in educating for homemaking, are essential qualifications for the man or woman who aspires to teach successfully in the rural school.

CHILDREN'S BOOK WEEK. Even in the present surfeit of special weeks and days, Children's Book Week, November 15 to 21, should not pass unnoted. The American Library Association lends its support to this "week," sponsored by the National Association of Book Publishers, by timely issuing the third number of *The Children's Yearbook*. This book is compiled by the committee on library work with children of the American Library Association and offers up-to-date and enlightening information and suggestions concerning the whole question of reading for children. Parents and teachers who are in doubt concerning what a child's book should be, find in this tangible help. Here, an author reminds us that "childhood is as it always was," and an illustrator shows that details about which the professional artist concerns himself are often mere "bagatelle," since the child craves only such drawings as permit his imagination to play upon them. A librarian recalls the allusion of the great French naturalist, Fabre, to the fact that for each of us, according to our individual turn of mind, certain books open horizons hitherto undreamed of and mark an epoch in our mental life.

While a greater production of books having this vital spark is highly to be desired, the experience of librarians shows that the format of the book is a large factor in determining how frequently it is chosen by the child reader. Some books are too cumbersome and heavy for small hands; flexible bindings are the only ones that open easily and yet have strength and durability. A gay, colorful cover catches the eye quickly, but unless it honestly indicates the content of the book the child may feel he has been tricked. Typography is of major importance, for small, commonplace print cripples even the masterpiece in literature. Ideally, the English used should be simple and clear.

In presenting the relation of children's reading to training for social adjustment, a psychologist and mother says, "Books stimulate to action

and conquest; books stir to endeavor that would not be possible without their help." Recognizing that the child's possibilities will show development in proportion to the fitness of his environment, she suggests that satisfying and challenging books will make his environment richer and more experimental. Discussed here also is the matter of books in the child-controlled school. An educator tells us that "Just as children who prefer pickles and doughnuts can be trained to like vegetables, so children who delight in comic strips may be trained to enjoy fine literature." However, she scores prepared lists and outlines as limiting the child's reading and taste so narrowly that he misses many "rare gems."

All this and more may be gleaned from this yearbook of the children's friends in the libraries. It suggests wider horizons in library work with children and scans the domestic and European book markets for volumes which present old folklore and literary classics in new but authentic form, fairy tales which reveal a clear inward vision and child-like sincerity, and stories of pioneer days, as well as books telling of the marvels of today's machine magic. Christmas is not so very far away; and of the presents that Santa Claus puts in his pack for the children, young or old, none holds more promise of genuine joy and true education than the well-chosen book.

AMERICAN EDUCATION WEEK. This "concerted effort on the part of teachers everywhere to increase the appreciation of the public for its schools" will be celebrated in 1931 from November 9 to 15. In developing the program for this year, its sponsors are trying to bring out the significant accomplishments of the public schools, and to this end have suggested the following themes for the seven days:

Monday, "What the Schools Are Helping America to Achieve in Economic Progress.'"

Tuesday, "What the Schools Are Helping America to Achieve in Child Health and Protection."

Wednesday, "What the Schools Are Helping America to Achieve in Citizenship and Loyalty to Law."

Thursday, "What the Schools Are Helping America to Achieve in the Improvement of Rural Living."

Friday, "What the Schools Are Helping America to Achieve through a Higher Level of Intellectual Life."

Saturday, "What the Schools Are Helping America to Achieve through the Enrichment of Adult Life."

Sunday, "What the Schools Are Helping America to Achieve through High Ideals of Character and Home Life."

The outline of the program with suggestions for carrying it out will be sent free to any teacher or school officers by the Division of Publications, National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C. The division has also prepared attractive bulletins and posters for local use, which may be obtained at cost or reproduced in school print shops or in other economical ways.

A longer statement of the purpose and plans of the week will be found in *School and Society* for August 29, 1931.

"BUY INTELLIGENTLY." Encouragement to the program for educating consumers to purchase more wisely has come with the publication by the General Federation of Women's Clubs of a 16-page leaflet with this title. It outlines, for club discussions, "material and suggestions which may assist the consumer in a more intelligent choice of foods, clothing, household furnishings and equipment," and is issued by the Division of Family Finance of the Department of the American Home, whose chairmen are, respectively, Dr. Josephine L. Peirce and Mrs. John D. Sherman.

The leaflet is especially significant to home economists because it was prepared with the help of the committee on standardization of consumer goods in the American Home Economics Association, and of the home economics extension service of Ohio State University.

Food, clothing, and household furnishing and equipment are the main topics for which study and readings are suggested, but there is also general consideration of the practical importance of buying intelligently and practical hints as to "what any club can do."

DR. ESTHER McGINNIS, FIELD WORKER IN CHILD DEVELOPMENT AND PARENTAL EDUCATION. Announcement was made by the American Home Economics Association in the August JOURNAL of the appointment of Dr. Esther McGinnis to the position made vacant by the death of Anna Richardson in February. Dr. McGinnis came on the rolls of the Association in August, and began her work by holding conferences with home economics teachers and supervisors in South and North Dakota; she arrived at Washington headquarters the middle of September. It is hoped that in an early issue of the JOURNAL she will tell a little of her plans for the year, including probably a trip to the Pacific and southwestern states.

Dr. McGinnis belongs to Columbus, Ohio, by birth and training, having taken her bachelor's degree at Ohio State University in 1915 and taught there for the following year. Then she joined the home economics faculty at the University of Maine and, save for one year at the University of Idaho, remained at Orono until 1926, for the last three years as head of the home economics department. Summers were spent in study until 1923, when she received the master's degree from Columbia University. From 1926 to 1928 she was a fellow of the National Research Council, studying for the doctorate which was granted her by the University of Minnesota in 1928. She stayed on there as associate professor in charge of parent education until she came to the Association.

At the University of Maine she was responsible for the introduction of a baby into the home management house, and since then has had increasingly varied experience in child training, in planning group study for parents, and in training teachers for such work. Those who know her best all feel that because of her training, experience, and proved ability, the Association is fortunate in having her take charge of its program for child development and parental education.

THANKSGIVING DINNERS IN OLD NEW ENGLAND. Old New England tradition being especially connected in our minds with Thanksgiving celebrations, the following incident, recorded by Rev. L. Conant about a Thanksgiving dinner held in the town of Danvers, Massachusetts, in 1714, seems not out of place here:

> When ye services at ye meeting house were ended, ye council and other dignataries were entertained at ye house of Mr. Epes, on ye hill near by and we had a bountiful Thanksgiving dinner, with bear's meat and venison, the last of which was a fine buck shot in ye woods near by. Ye bear was killed in Lynn Woods near Reading.
>
> After ye blessing was craved by Mr. Garrich of Wrentham, word came that ye buck was shot on ye Lord's day by Pequot, an Indian, who come to Mr. Epes with a lye in his mouth like Annias of old.
>
> Ye Council therefore refused to eat ye venison, but it was afterwards decided that Pequot should receive 40 stripes save one, for lying and profaining ye Lord's day, restore Mr. Epes ye cost of ye deer, and considering this a just and righteous sentence on ye sinful heathen, and that a blessing had been craved on ye meat, ye Council all partook of it but Mr. Shepard, whose conscience was tender on ye point of ye venison.

We are indebted for the quotation to the charming menu used on Thanksgiving Day last year by the Belden-Stratford Hotel, Chicago. Like many others from that hostelry, the card draws upon the choice

collection of old prints and books belonging to Mr. Arnold Shircliffe. Its front cover carries a reproduction of one of an old series of colored prints of sports in America and depicts an eighteenth century turkey shoot, a popular test of marksmanship which undoubtedly provided the turkey for many a family at Thanksgiving. On the inside of his menu, Mr. Shircliffe provided the following description by Captain Basil Hall, who traveled in America in 1827:

At a Country Inn bearing the English name of Andover, close to the Indian River Sawsheen, I observed the following printed bill stuck up on the Bar

"Sportsmen Attend
300 Fowls
will be set up for the Sportsmen at the Subscribers Hotel in Tewksbury,
on Friday, the 12th of October, inst. at 8.00 A.M.
Gentlemen of Tewksbury, Lowell and vicinity are invited to attend.
William Hardy."

This placard was utterly unintelligible to me, and the landlord laughed at my curiosity but good humoredly enlightened my ignorance by explaining that these shooting matches were so common in America that he had no doubt I would fall in with them often. The birds set up were barn yard fowls, placed at certain distances, and fired at by one who choose to pay the alloted sum for the shot. If he kills the bird, he is allowed to carry it off; otherwise, like a true sportsman, he has the amusement for his money. Cocks and hens being small birds, are placed at the distance of 165 feet, and for every shot with ball the sportsman has to pay 4 cents. Turkeys are placed at twice the distance, or 110 yards, if a common musket be used but at 165 yards if the weapon be a rifle. In both these cases, the price per shot is from six to ten cents.

Tucked down in a corner of the menu is also this pleasant old rhyme:

Turkey boiled is turkey spoiled,
Turkey braized, the Lord be praised,
But for turkey roast, I love it most.

MEMBERSHIPS IN THE INTERNATIONAL FEDERATION OF HOME ECONOMICS. The International Committee offered in the JOURNAL for December 1930 to transmit to the International Federation in Fribourg, Switzerland, the dues of any Americans who wished to take out individual memberships. Fourteen responded. The offer is now renewed for the coming year.

As most JOURNAL readers know, the International Federation was organized in 1911. It is the only international organization in the field of

home economics; the office which it maintains in Fribourg is the only organized clearing-house for information about home economics in different countries; and its monthly *Bulletin* is the only periodical devoted to home economics developments throughout the world. The Federation has taken the initiative in calling four international congresses of home economics and plans to arrange a fifth as soon as the European situation allows.

The Federation is supported by private gifts, by subsidies from governments, and by membership dues from organizations and individuals. Since the policy of the United States government is not to lend official support to such international institutions, it behooves individual Americans to show their interest by personal adherence.

The individual membership dues are 10 Swiss francs a year. Such membership entitles one to receive the monthly *Bulletin de l'Office International de l'Enseignement Ménager*, thus keeping one in touch with home economics activities, publications, and news in many countries, and it also brings the stimulating satisfaction of doing one's bit toward international understanding by contact with one's professional colleagues in other countries.

Anyone wishing to join, may send a check for $2.15 (the current cost of an international postal order for 10 Swiss francs) and the exact address for the *Bulletin* to the secretary of the International Committee, Miss Helen W. Atwater 617 Mills Building, Washington, D.C. To simplify handling, checks should be drawn in favor of Helen W. Atwater.

"NEW YEAR'S RESOLUTIONS"—A CORRECTION. It is not our own or anyone else's new year's resolutions which we wish to change at this late date, but rather the abstract of a paper of this title on page 688 of the JOURNAL for July 1931. The Manati High School there referred to is in Porto Rico, not the Philippines, as incorrectly stated. Our resolutions for 1932 will include one to improve our geographical alertness.

RESEARCH

THE RELATION OF ACID-BASE BALANCE OF THE RATION TO THE GROWTH AND REPRODUCTIVE FUNCTIONS OF THE RAT

HELEN S. MITCHELL AND LILA MILLER

Nutrition Research Laboratory, Battle Creek Sanitarium, Battle Creek, Michigan

THE recent emphasis on the acid-base balance of the diet in human nutrition has led to considerable research on the subject. Normal infants and young children seem to tolerate a comparatively wide range in the potential reaction of foodstuffs without showing any serious disturbances (1, 2). It is generally conceded, however, that an approximate balance between acid and basic factors in the human diet is desirable and that a high alkaline reserve increases resistance to disease. In an attempt to learn more concerning this phase of nutrition, recourse has been taken to the use of experimental animals. The difficulty has been that there is a wide difference in response among various species to alterations in the acid-base balance of the rations. The guinea pig, dog, and rabbit seem to be more sensitive to such variations than are rats and swine (3, 4, 5, 6, 7, 8). It is quite likely that a similar divergence in metabolic response may exist between animals and humans, which possibility should be taken into account in the interpretation and application of animal work in human nutrition.

The present paper is a summary of our experience in the attempt to use rats for experimental subjects in acid-base studies. It may also offer some explanation of the conflicting results of other workers (9, 10). For this study graded additions of both acids and bases have been made to an otherwise adequate ration. Growth, reproduction, and calcification of the bones have constituted the chief criteria for judging the well-being of the animals.

Procedure. Ration 506, which has been used for the stock colony in this laboratory since 1926 and has proved to be adequate for growth, reproduction, and rearing of young, was chosen as the basal diet (12).

This ration consisted of:

	Per cent
Dried whole milk	20
Dried celery tops	3
Yellow corn (ground)	10
Rolled oats	10
Whole-wheat bread crumbs	42
Peanut meal	12
Wheat germ	2
Dried yeast	0.5
Iodized salt	0.5

This mixture was practically neutral, having a potential reaction of 0.66 cc. N alkali per 100 grams of food, as calculated from acid-base food tables by Sherman (11).

To this basal ration, acids and basic salts were added, care being taken not to disturb the calcium and phosphorus ratio or the quantity and character of the proteins, fat, and carbohydrates. Hydrochloric, sulfuric, citric, and tartaric acids, sodium bicarbonate, potassium tartrate, and sodium citrate were the supplements selected. The quantities of each incorporated with 100 grams of ration were equivalent to 10 cc. and 20 cc. of normal solution. The mineral acids and bases changed the potential reaction of 100 grams of ration to approximately 9.4 and 19.4 cc. N acid and the alkalinity to 10.6 and 20.6 cc. N alkali, respectively. The organic acids (citric and tartaric) theoretically should not have changed the potential acidity of the ration but were used for comparison with the sodium salts of these acids. It was also desirable to introduce acids which might affect the palatability and digestibility of the ration without altering its potential reaction.

Besides varying the acid-base balance by direct additions to ration 506, the potential acidity was in one instance increased by substituting whole-wheat bread crumbs, which are potentially acid, for dry celery tops, which are potentially basic. In this modified ration, 506 C, neither the protein:fat:carbohydrate ratio nor the Ca:P ratio were significantly altered, but the acid-base balance was changed from 0.66 cc. to 5.2 cc. N acid per 100 grams of ration.

Experimental Animals. Seventy-five young albino rats were used for this study. All except the first group were started on the experimental rations when 28 to 31 days of age and continued for a period of 12 to 15 weeks. The first group were 39 days old when started and the experimental period was 17 to 20 weeks. All animals were kept in cages with raised wire floors, and the rations were fed *ad libitum*.

Results. The growth variations of litter mates receiving different supplements were no greater than individual differences among normal rats, as appears in table 1. No correlation could be noted between growth tendency and the type of supplement added to the ration. It is, therefore, concluded that the acid-base variation *per se* within the range used in this experiment does not interfere with growth.

The reproduction experiment, which was conducted with six females and three males, demonstrated that a wide range in acidity and alkalinity of the ration was not incompatible with normal fertility and gestation. All of the females raised normal litters totalling 46 young in the six litters. Since these animals presented no deviation in reproductive performance from our normal stock colony, no further experiment along this line was conducted.

To determine the calcification of bone at the end of the experimental period gross autopsy observations were made on the animals of litter IV to X inclusive. The femurs taken from the 50 experimental and control rats varied within normal limits as to weight. Ashing was carried out according to the recent Sherman technic (13). The ash weights ranged from 38 to 46 per cent of the green femur weights. The variations between litter mates and between animals of the same sex on similar rations were as great as any differences occurring among animals on the different rations. The average ash content of the femurs of rats from each of the ration groups were 41.7, 41.7, 42.0, 40.9, 42.0, 42.2, and 41.1, respectively. It is evident that such differences are entirely negligible. "Line tests" carried out on the 31 animals of five litters showed normal calcification in all cases, and the other two litters showed no evidence of rachitic symptoms. It is, therefore, concluded that acids *per se* of the range used in this experiment are not rachitogenic, as has been suggested by Samuel and Kugelmass (10), nor do bases as used here seem to have a beneficial influence upon the calcification of bone. These data, therefore, seem to indicate that the albino rat is not sufficiently sensitive to the ingestion of acids and bases to be a suitable experimental animal for studying the potential acid-base balance of foods when the range covered as in this study is comparable to that found in our natural foodstuffs.

Discussion. These observations are in accordance with those of Burns (9), who has reported that the administration of small quantities of hydrochloric acid to rats did not reduce the ash content of the bones nor retard growth. Extremely large doses daily (50 cc. 0.1 to 0.2 N HCl), however, did disturb growth but not bone composition. This

TABLE 1

Gain in Weight of Rats Kept for 12 Weeks on Rations Supplemented to Provide Different Acid-base Contents

(Unless otherwise indicated the added supplement was equivalent to 10 cc. N acid or N base per 100 grams of ration.)

LITTER NUMBER	RATION 506		RATION 506c[1]		SUPPLEMENTS													
					Hydrochloric acid		Sulfuric acid		Sodium bicarbonate		Sodium citrate		Potassium tartrate		Citric acid		Tartaric acid	
	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks	Initial weight	Gain in 12 weeks
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.
I	102♂	226			106♂	214			88♂	194								
	83♀	103			89♀	138			89♀	101								
	80♀	80			83♀	130			80♀	86								
II	56♂	228	65♂	128	55♂	179	65♂	145							56♀	119		
			55♀	110	55♀	99	62♀	133							64♀	96		
							56♀	122										
III	45♀	115	45♂	153	45♀	104	35♂	162							48♂	215		
			44♂	165											50♂	158		
IV	73♂	135			74♂	183			72♂	168								
	68♀	102			71♀	97			73♂	179								
									72♀	113								
V	80♂	186			75♂	168			68♂	214								
	71♀	69			73♀	102			67♀	107								
VI	42♂	150			48♀	89			45♂	142								
									52♀	98								

VII	57♀	90			78♀	112			65♀	87								
									55♀	105								
									65♂	145[2]								
									65♀	115[2]								
VIII	76♂	247			72♂	279[2]	70♂	257[2]	67♂	223[2]								
	65♀	108			60♀	116[2]	68♀	132[2]	65♀	123[2]								
IX	67♂	251									64♂	248			68♂	285		
	62♀	129									62♀	133			60♀	124		
											54♀	119[2]			66♂	264[2]		
											56♀	144[2]			52♀	122[2]		
X	62♀	107											60♀	90			68♀	90
													71♂	203			69♂	221
													67♀	106[2]			69♀	76[2]
													75♂	165[2]			62♂	205[2]

[1] Supplement equivalent to 5.2 cc. N acid per 100 gm. of ration.
[2] Supplement equivalent to 20 cc. N acid or N base per 100 gm. of ration.

dosage is at least 2 to 5 times as great as that used in the present study. It is to be noted that Burns employed a uniform basal ration throughout the experiment, thus keeping the Ca:P ratio constant.

The work of Samuel and Kugelmass (10), however, does not confirm these observations. The disturbances in growth and bone calcification of their animals receiving the moderately acid-forming diet and the lack of such disturbances on the part of those receiving the strongly base-forming diet were striking. They attributed these findings to the potential acidity and alkalinity of the respective rations. The degrees of acidity and alkalinity of the Samuel and Kugelmass rations as compared with those used in the present investigation are shown in table 2. The

TABLE 2

Comparison (per 100 grams of dry food) of rations used by Samuel and Kugelmass and by Mitchell and Miller

INVESTIGATORS	ACID-BASE BALANCE		CALCIUM	PHOSPHORUS	CALCIUM AND PHOSPHORUS RATIO
	N acid	N alkali			
	cc.	*cc.*	*gm.*	*gm.*	
Acid-forming ration:					
Samuel and Kugelmass	15.05		0.06	0.30	1:5
Mitchell and Miller	5.2		0.21	0.41	1:2
" " "	9.4		0.24	0.42	4:7
" " "	19.4		0.24	0.42	4:7
Base-forming ration:					
Samuel and Kugelmass		35.0	0.18	0.25	3:4
Mitchell and Miller		0.66	0.24	0.42	4:7
" " "		10.6	0.24	0.42	4:7
" " "		20.6	0.24	0.42	4:7

calcium and phosphorus content of the Samuel and Kugelmass rations has been calculated from the composition as given in their paper. The differences in the total calcium content and in the Ca:P ratios of their two diets would seem to be subject to criticism. The Ca:P ratio of their base-forming diet and of our diets were but slightly different and within a normal range, whereas that of their acid-forming diet was considerably below what has come to be the accepted normal for rats. It seems logical that animals on a 1 Ca:5 P ratio (Samuel and Kugelmass acid-forming diet) might well show retarded growth and poor bone development, irrespective of the acidity of the ration. It is noteworthy that in both their experiment and ours, the diets with adequate Ca:P ratios promoted normal growth and produced no symptoms of rickets. We found this true in spite of the additions of moderate and higher levels

of acid to the rations. Furthermore, our potentially alkaline rations caused no increased growth or any better calcification. Thus, it seems possible that the deleterious and beneficial effects attributed by Samuel and Kugelmass to the acid-base variations of their diets might well have been due to differences in the Ca:P ratios.

Such disturbances in Ca:P ratio may account for certain detrimental effects of the average American diet which is potentially acid but is also low in calcium.

The maintenance of a constant and adequate Ca:P ratio, is a precaution which would seem to be necessary in investigating any such factor as the acid-base balance of foods, when it is desirable that all other variables be eliminated.

Summary. 1. Different degrees of acidity and alkalinity of an adequate ration were created by adding hydrochloric, sulfuric, citric, and tartaric acids, and sodium bicarbonate, sodium citrate, and potassium tartrate, and by substituting whole-wheat bread crumbs for dried celery tops in the ration.

2. The range of acidity and alkalinity was equivalent to 19.4, 9.4, and 5.2 cc. N acid and 0.66, 10.6, and 20.6 cc. N alkali per 100 grams of dry ration.

3. The acid-base variations *per se* did not markedly interfere with growth, reproduction, or calcification of the bones of experimental rats. Emphasis is placed on the necessity of a constant and adequate calcium-phosphorus ratio.

4. It is concluded that the albino rat is not sufficiently sensitive to the ingestion of acids and bases to be a suitable experimental animal for studying the potential acid-base balance of foodstuffs.

REFERENCES

1. Baumgardt, G. *Arck. Kinderheilk* **69**, 209–238 (1921).
2. Shohl, A. T., and Sato, A. *J. Biol. Chem.* **58**, 235–255 (1923).
3. Steenbock, H., Nelson, V. E., and Hart, E. B. *J. Biol. Chem.* **19**, 399–419 (1914).
4. Lamb, A. R., and Evvard, J. M. *J. Biol. Chem.* **37**, 317–328, 329–342 (1919); *Iowa Agr. Exp't Sta. Bull.* No. 70, 175–182, 183–192, 195–208 (1921).
5. Moore, B., Roof, H. E., and Knowles, R. E. *Biochem. J.* **3**, 279–312 (1909).
6. Goto, K. *J. Biol. Chem.* **36**, 355–376 (1918).
7. Pulewka, P. *Arch. Exptl. Path. Pharmakol.* **119**, 140–152 (1926).
8. Elias, H. *Wiener klin. Wochchr.* **27**, 21–22 (1914).
9. Burns, C. M. *Biochem. J.* **23**, 860–867 (1929).
10. Samuel, E. L., and Kugelmass, I. N. *Proc. Soc. Exptl Biol. Med.* **27**, 195–196 (1929). *Am. J. Diseases Children* **39**, 687–700 (1930).

11. SHERMAN, H. C. *Food Products.* New York: The Macmillan Company, 1914, pp. 353–362.
12. MITCHELL, H. S. *Bull. Battle Creek San. Hosp. Clinic* **25**, 185–187 (1930).
13. SHERMAN, H. C., and STIEBELING, H. K. *J. Biol. Chem.* **88**, 683–693 (1930).

THE COOKING OF FOOD WITH HEAT GENERATED BY THE RESISTANCE OF THE FOOD TO THE PASSAGE OF AN ALTERNATING ELECTRIC CURRENT

LENORE E. SATER

Household Equipment Department, Iowa State College, Ames

FOOD is cooked by the application of heat. This heat is produced in two ways: by a chemical process known as burning and by the resistance of a conductor to the flow of an electric current.

The efficiency of either method when used for cooking purposes may be defined as the ratio of the heat taken up by the food to the total quantity liberated per unit quantity of fuel or electricity used.

This efficiency depends on several factors: the type of equipment and method used for heat production, the type of cooking utensil, and the type of cookery.

The efficiency of the appliances used for heat production is very low. A large percentage of the heat energy is lost in its transmission from the source of production to the food. The approximate efficiencies of certain fuels when used for cooking purposes in our average stoves have been shown to be as follows: coal, 4.9 per cent; gas, 56.7 per cent; kerosene, 49 per cent; electricity, 86.1 per cent.

If we accept the definition of an ideal cooking appliance as one that will apply the heat at the place where it is to be utilized and in exactly the right amounts, we find, despite the relatively high efficiency of electrical appliances now being used, that a decided need for increased efficiency in cooking appliances still exists.

In each of the types of stoves commonly used we find the heat being generated and transmitted to the place of utilization by conduction, radiation, and convection currents. As a result, a large quantity of heat is lost, either in heating the intervening media, or by heat escaping into the surrounding media. In an effort to overcome these two outstanding losses, the present research was carried on. An electric current was passed directly through the food itself. The resistance of the food to the

passage of the electric current generated within the food enough heat for the cooking process. Thus heat was developed in the place where it was to be utilized and in the exact quantities needed.

It should be explicitly understood that the apparatus used for the experiment was designed for laboratory experimental work and is not adaptable for practical home use.

The apparatus consisted of an earthenware cylinder sealed to an allegheny metal disk. This gave a water-tight container with the bottom of the container forming the lower electrode. The container rested on one end of a rectangular bakelite base. The metal bottom of the container made electrical contact with a post imbedded in the bakelite base, which in turn was connected to one terminal of a knife-blade connection in the opposite end of the base.

Mounted on the bakelite base above the knife-blade connection was a metal post in which played an adjustable U-shaped arm. To the free end of the U was fastened a second metal disk which formed the top electrode. This electrode made electrical contact with the remaining terminal of the knife-blade connection by means of a wire passing through the metal post.

The testing of the apparatus consisted of two parts—testing its efficiency, and determining its practical application in the cooking of food.

The electrical set-up consisted of a step-up transformer, a rheostat, voltmeter, wattmeter, and pyrometer. The step-up transformer boosted the line current from 110 volts to 132 volts. Then by the use of the rheostat the voltage, which varied during the cooking process, was held constant at 110 volts. The wattage and voltage were recorded by graphic meters. A multiple recording electric pyrometer was used for securing permanent temperature records. The current used was 60-cycle alternating current. In the efficiency tests tap water was used as the resistance medium.

The results of the tests gave an efficiency of 97.75 per cent, showing that the losses due to heating the transmitting media were largely overcome by this process.

The container was then insulated with rock wool. Tests on this cooker showed the efficiency increased to 99.49 per cent, which proved that the losses to the outside media also could be overcome by this process.

In the cooking of most foods the efficiency was not as high as that obtained with water, because of the fact that it was found necessary to cover the food with water. This water was not used for conducting heat to the food as in the customary methods of cookery, but for conducting heat away from the electrodes.

In the early stages of the research, the food was placed directly between the electrodes. Lean meats and certain fruits and vegetables, such as tomatoes and juicy apples, were found to cook rapidly. Others, such as carrots and potatoes, conducted the current for a few seconds, then sparks flew and the current stopped. When the electrodes were removed, the top layer of cells was found to be charred, forming a layer of insulation. The degree of scorching varied with different foods. As alternating current was used, the cause of this was not understood. The wiring was reversed, as a check for polarity, but the result remained the same. The electrical resistance of allegheny metal being 416 ohms per circular mil foot, not enough heat was generated within the electrode itself to produce this scorching action.

The thermal conductivity of allegheny metal is 0.069 calories per centimeter per second per degree centigrade. In an effort to find an electrode that would disperse more rapidly the concentration of heat, which produced the scorching action, copper electrodes were constructed with a thermal conductivity of 0.91. These copper electrodes were chrome plated and nickel plated to prevent the action of food acids and alkalies on the metal. They were tested, using tap water for a resistance medium. During the first test, the plating, which had been put on by the use of direct current,was removed in spots with alternating current, leaving the copper core exposed.

Working on the theory that the scorching action might be partially due to a concentration of the electric current at the point of contact between the electrode and the food, spiked electrodes were constructed. With these, the surface area between food and electrodes was increased. Potatoes were used as the medium, but it was found that instead of spreading the concentration of current by the increased area of surface contact, a larger quantity of current passed through the food. The scorching action remained the same, each spike on the top electrode scorching the potato on the inside. In addition, the potatoes did not cook uniformly. The current flowed directly between the spikes from the opposite electrodes, leaving large spots of potato uncooked.

When water was added to the food, it did not prevent the scorching entirely, although it conducted the heat away sufficiently to permit a steady flow of current. The only method found to prevent completely the scorching action was to place the top electrode slightly above the surface of the food, but in contact with the water. Thus the current passed first through the water and then through the food.

This method decreased the efficiency as it required a larger quantity of

water and increased the length of the path for the current, thus increasing the time of cooking. Tests in which the length of path for current were varied showed that this factor had a decided effect on time. If the resistance and cross-sectional area of the conducting media were held constant, the time was a function of the length of path traveled by the current. The greater the length of path the longer was the time for cooking.

The earthenware container with the disk electrodes was used for the experimental work on foods. Fruits were found to cook readily. They were prepared as for ordinary cookery. The sugar was dissolved in a small quantity of water and poured over the fruit before the current was turned on. When the sugar was added directly to the fruit it did not go into solution in the short time of cooking. The cooking time for one pint of fruit varied from four minutes for pineapple to 60 seconds for strawberries and raspberries. Forty pints of the fruit were canned and tested for keeping qualities; not one developed molds or bacteria. When opened and judged for texture and flavor, they were all apparently overcooked. The flavor in most cases resembled more nearly that of fresh fruit than fruit cooked by the usual method. The color was not affected.

Vegetables were prepared as for ordinary cookery and were covered with cold water. The cooking time was considerably less than by the usual method. Potatoes two inches in diameter cooked in 14 minutes. Preliminary tests showed cold water to have a higher resistance than hot water. Therefore, in order to increase the quantity of current passing through the food, cold water was used with all vegetables.

The vegetables cooked uniformly throughout. Their texture was good and the fresh flavor seemed to be retained. The color was not affected.

Very little work was done on meats. Lean meats were found to have a very low resistance. A 2½-pound roast, approximately four inches thick, cooked in two minutes. Fat meat showed a high resistance. Beef was found to be more tough than when cooked by the customary methods. The longer the cooking time, the tougher was the product.

The internal resistance of food varied during the cooking process. A rheostat was used but the resistance of the food varied so rapidly that in many instances it was found difficult to hold the voltage constant.

The internal temperatures reached were far above the boiling point of water. In potatoes a temperature as high as 115° to 120°C. was reached. The texture and flavor of the potato resembled that of a baked potato. The starch grains appeared puffed when examined under the microscope.

Summary and Conclusions. A piece of cooking apparatus was designed and constructed for cooking food with heat generated by the resistance of

the food to the passage of an alternating electric current. Fruit, vegetables, and meats were cooked by this process and judged for texture, color, and flavor. Fruits were canned and tested for keeping qualities.

The results of the research proved: (1) that it is possible to construct an appliance that will develop heat within the food where it is needed, and in the exact quantity needed for the cooking process; (2) that the efficiency of electricity as a cooking fuel may be greatly increased; (3) that a large number of foods may be cooked in a much shorter period of time by this method than by the present method of cookery; (4) that in cooking fruits and vegetables by this method, good products, and in many instances better products, may be obtained; (5) that this method of cooking tends to retain the natural flavor of the food; (6) that the short period of time used for cooking fruit is sufficient to insure good keeping qualities; and (7) that meats are toughened by the high dry heat.

BOOKS AND PERIODICALS

NEW BOOKS

Handy Book of Recipes for Twenty-Five. By SIBYLLA HADWEN and CELIA BERNARDS. Boston: M. Barrows & Company, 1931, pp. 164, $2.00.

"A book for medium-sized groups, fraternal organizations, small school cafeterias and tea rooms" by two graduates of Oregon State College with professional experience in hospital and college dietetics. Bears in mind the needs of those catering to school cafeterias, tea rooms, and special groups and gives particular attention to recipes of moderate cost. Includes a brief statement of the principles on which well-balanced menus are built up.

Cooking for Two. By JANET MCKENZIE HILL. Boston: Little, Brown & Company, 1931, pp. 362, $2.50.

A revision of a popular book first published in 1909 by a well-known teacher and writer on such subjects. The present edition has been brought into accord with recent theories of food values, especially in the construction of menus. Recommendations for temperature as well as time are now included in the recipes. Miss Bertha E. Shapleigh of Teachers College, Columbia University, has aided in the revision.

Tables of Food Values. By ALICE V. BRADLEY. Peoria, Illinois: The Manual Arts Press, 1931, pp. 128, $2.00.

Two sets of tables, one showing the food values of average servings, and the other those of 100 gram portions of commonly used foods. In each case, data on size, weight, or volume, protein, fats, carbohydrates, energy, and mineral matter of the various materials are shown on a left-hand page, while on the right are found indicators to their value as sources of minerals, vitamins, and bulk, and their acid or base reaction. Recipes are given for the cooked foods and other preparations included in the tables.

How to Make Hats. By ROSALIND WEISS. New York: McGraw-Hill Book Company, Inc., 1931, pp. 315, $2.75.

Job sheets with directions for self-instruction in the fundamental processes used in making hats. The ten units are devoted to hand-blocking, drapery, frame making, covering of frames, finishing processes, transparent hats, collapsible hats, straw work, renovations and linings, with specific directions and carefully prepared illustrations for the performance of each operation and due consideration of line, color, and proportion. By a skilled milliner with successful experience in supervising millinery classes and intended for use in day and evening schools.

The Shuttle-Craft Book of American Hand-Weaving. By MARY MEIGS ATWATER. New York: The Macmillan Company, 1931, pp. 275, $3.00.

A reissue of a well-organized, attractive book first published in 1928 and described in the JOURNAL for January 1929.

Conduct Problems: Grade 4, "Playing Fair"; Grade 5, "What Would You Do?"; Grade 6, "Good Sportsmanship"; Grade 7, "What's the Right Thing to Do?"; Grade 8, "Playing the Game." By W. W. CHARTERS, MABEL F. RICE, and E. W. BECK. New York: The Macmillan Company, 1931, pp. 71 each, $0.32 each.

These work-books are presented as a means towards the development in children of desirable character traits. Conduct problems which sooner or later face every child are presented in story form. To encourage the pupil to put his judgments into actual practice, each story is followed by questions and written exercises stimulating thought about ethics and gentle manners. Each book contains 32 short stories, or one for each week of the average school year, as well as preview cases upon which the judgment is to be reviewed at the close of the year.

Methods in Educational Research. By FREDERICK LAMSON WHITNEY. New York: D. Appleton and Company, 1931, pp. 335, $2.25.

Material here presented is the outgrowth of the author's seven year's experience in directing the educational research of graduate students, selected and organized "to develop a conception of the scientific method in the field of education, to aid the beginner in educational research." As a hand-book of instruction, the text defines research and presents tangible suggestions for selection of problems and methods; development of the plan; value of reviewing previous similar studies; collection, analysis, and classification of data; organization of a final report; and discussion of the abilities and traits of a good research worker. As a source-book, it includes an annotated reference list, a general bibliography, and gives agenda for five studies typical of historical research, the survey, experimentation, prediction, and philosophical analysis.

Larry. Thoughts of Youth. New York: The John Day Company, 1931, pp. 152, $1.25.

Quotations from the diaries, letters, and themes of a normal college boy; written without any idea of publication and now assembled several years after his sudden death, because of the wholesome picture they give of the interests, opinions, and ambitions of a high-minded, well-balanced, but still popular and far from priggish, young man of today. Parts would make good reading for classes in personal regimen and family relationships.

Forest Facts for Schools. By CHARLES LATHROP PACK and TOM GILL. New York: The Macmillan Company, 1931, pp. 336, $1.00.

Reliable information about the tree, the forest, forestry, forest products, forest enemies, and forest conservation is here assembled in a form which is both readable and suited to school use.

How to Make Money at Home. By ELITA WILSON. New York: The Macmillan Company, 1931, pp. 179, $2.00.

All sorts of suggestions for ways in which women with talents of one kind or another can turn these to profitable use at home. Perhaps somewhat optimistic but likely to be helpful in cases where the possibilities of certain practical skills have been overlooked.

ABSTRACTS FROM PERIODICALS

CHILD DEVELOPMENT AND PARENTAL EDUCATION

EDUCATIONAL METHODS

The child's reaction to the movies, MAY V. SEAGOE. *J. Juvenile Research* **15**, No. 3 (1931, July) pp. 169–180.

That the moving picture occupies an important place in the life of many children is shown by returns from a questionnaire and supplementary objective data collected by the Women's Education Club of the University of California at Los Angeles from 800 elementary and secondary school children. The study shows that going to the movies is frequently a weekly habit, that children prefer rapid action, excitement, laughter, and novelty in moving pictures; also that the primary appeal is to the emotions rather than to the intellect. The great educational possibilities in the social and moral influence of the cinema suggest the need for allowing the child to see only carefully selected pictures presenting socially desirable content.

The effect of sex differences in the study of general science, CARROLL ATKINSON. *J. Educ. Research* **24**, No. 1 (1931, June) pp. 61–66.

The popularly accepted educational belief that boys are generally superior to girls in scientific studies was tested during one school term in one of the Pasadena junior high schools. Eight tests of the objective true-false type, consisting of 50 questions each, were given to the members of five general science classes. The results indicated that boys were slightly superior to girls in general science.

Don't nag about manners, J. ALLAN HICKS. *Parents' Mag.* **6**, No. 9 (1931, Sept.) pp. 20, 38.

The problem of teaching manners to young children is one to be approached indirectly, since social forms will usually be acquired as social pressures provide adequate motives for learning them. However, it is of importance that early in life children become socially-minded, learn to get along with other children, and have as models for imitation adults who speak pleasantly.

What is parent education all about? BENJAMIN C. and SIDONIE M. GRUENBERG. *Parents' Mag.* **6**, No. 9 (1931, Sept.) pp. 14–16, 45+.

Parent education is shown to deal with numberless facts and rules that help parents to look after the physical and mental well-being of their children. It also tries to help parents to make more effective adjustments to their surroundings and tasks by encouraging the periodic re-appraisal of traditional attitudes and practices. Such re-appraisal is made possible through increased insight into the mental and emotional processes of the child and humanity in general.

I am a week-end father, HENRY B. LENT. *Parents' Mag.* **6**, No. 9 (1931, Sept.) pp. 17, 38, 40.

A father describes here the rare companionship which he shares with his son and discusses helpfully such puzzling matters as white lies and the bullying instinct.

The memory span of preschool children, ELIZABETH B. HURLOCK and ELLA D. NEWMARK. *Ped. Sem. & J. Genetic Psychol.* **39**, No. 2 (1931, June) pp. 157–173.

This experiment was undertaken to obtain before the child enters school, a

knowledge of his memory span (generally accepted as one of the foundations of intellectual development). Eleven boys and nine girls with an average chronological age of five years, six months were given tests so devised by the author as to give play to auditory, visual, kinesthetic, logical, and verbatim varieties of memory span. The results in general showed the tests to be "highly diagnostic of intelligence."

Providing for individual differences in the classroom, DONALD D. DURRELL *Understanding the Child* **1**, No. 2 (1931, March) pp. 4–5.

Poorly adjusted conditions of learning are shown to be responsible for many school failures. The individualized program not only calls for knowledge of each child's mental age and the adjustment of classroom procedure to allow for self-direction, cooperative learning, development of potential powers, and knowledge of the joy of achieving, but also places upon the teacher responsibility for individual guidance in personality development and habit formation if through it tendencies to faulty posture, lack of emotional control, carelessness, day-dreaming, and similar shortcomings are to be overcome.

MENTAL HYGIENE AND BEHAVIOR PROBLEMS

The nursing of ruminators, SISTER GRACE. *Am. J. Nursing* **31**, No. 6 (1931, June) pp. 653–656.

Rumination (the nervous trick of regurgitating food in order to spit it out or chew it again) is shown to be sometimes so serious and baffling a condition of infancy as to endanger life. A ruminating cap is described and sketched which if correctly fitted and adjusted will hold the baby's mouth so tightly closed that he cannot work his tongue and lower jaw in the characteristic motion, a mechanical restraint which has proved effective in combating this neurotic trick in children under two years of age. A case history is given of an infant so affected by this habit that at the age of eight months he weighed only 9½ pounds but when restrained in the way described was able in four months time to attain normal growth and development.

The early recognition of mental diseases in children, J. KASANIN and LOUISE VEO. *Am. J. Orthopsychiat.* **1**, No. 4 (1931, July) pp. 406–429.

That the psychiatrist can predict and possibly prevent the appearance of a psychosis in the case of a child of certain personality traits and a known environment seems probable in light of the accepted theories that fundamental personality traits become well established before adolescence and that functional psychoses occur when personalities tending to evade reality are subjected to environmental stress with which they cannot cope. In this connection, study of eight cases of children who, early in life, were brought before the Judge Baker Foundation (associated with the Juvenile Court of Boston), and later became psychotic, discloses that personality disorders were apparent long before symptoms of mental disease appeared. Such pre-psychotic traits appearing in childhood or adolescence might well indicate impending disorder, which at this time might be averted by proper preventive measures.

The ordinal position of problem children, CURT ROSENOW and ANNE H. WHYTE. *Am. J. Orthopsychiat.* **1**, No. 4 (1931, July) pp. 430–434.

Statistical evidence was collected from 231 cases of problem children belonging to 3-child families in a study made to verify previous study in which analysis

of some 200 two-child families showed preponderance of first-born among the children referred for guidance. This second study disclosed relative preponderance of childhood problems according to the ordinal position in the family. Among the patients of the child guidance clinics supplying the records studied, namely, those of Cleveland, Philadelphia, Minneapolis, and St. Paul, there appeared a preponderance of first-born children and more second- than third-born.

Aspects of delinquency and superior mentality, RALPH WHITE and NORMAN FENTON. *J. Juvenile Research* **15,** No. 2 (1931, Apr.) pp. 101–107.

Study at the Whittier State School of California of the relationship of the intelligence of delinquents to the type of their offense disclosed that the home environments of the brighter boys were as unfavorable as those of the duller boys; that companionship in the act of delinquency was approximately as frequent in the case of the brighter as of the duller boys; and that forgery was the only type of offense here represented which showed relationship with high intelligence.

A comparative study of play information and athletic achievement in delinquent and non-delinquent boys, VERIL MURRAY. *J. Juvenile Research* **15,** No. 2 (1931, Apr.) pp. 111–120.

That delinquent boys have had no opportunity to become enthusiastic over athletics and hence have used their leisure time for less wholesome recreation is suggested by a comparison of abilities in play formation and individual athletic achievement of the boys of Whittier State School (California's only state correctional school for younger delinquents) and the boys of the Monrovia-Arcadia-Duarte High School. The play formation test (constructed by the author) was limited to certain athletic activities taught in both schools, including foot ball, basket-ball, track activities, and baseball and consisted of fifty short-answer questions of the true-false and multiple choice varieties on each of the four listed sports. Athletic achievement was measured by scores made on the California State Decathlon Test for High Schools, which is a practical achievement test in ten athletic events and measures all-round development. One hundred comparable cases from each school were used for final comparisons. These showed that for the entire group athletic knowledge tended to be accompanied by athletic achievement and warranted the conclusion that a good vigorous program in physical education would yield rich returns in the reduction of delinquency.

A study of truants and retardation, EDNA WILLIS MCELWEE. *J. Juvenile Research* **15,** No. 3 (1931, July)pp. 209–214.

One hundred ten specific truant cases heard in court during the school year 1929–1930 were selected for special study by the Bureau of Attendance and a committee on retardation appointed by the superintendent of schools of the city of New York. Careful examination disclosed that approximately half of the 26 girls and 84 boys selected possessed only border-line intelligence.

The "median" truant was two terms retarded in grade placement and showed a reading attainment of three terms below that of the average child in his grade, although that ability was two terms in advance of the expectation warranted by his mental age.

Cultivating wholesome personality, WILLIAM H. BURNHAM. *Parents' Mag.* **6,** No. 9 (1931, Sept.) pp. 13, 42–45.

The tendency to heterosexuality and to

break away from dependence are cited as the most important factors in the normal development of youth.

Training children in emotional control and expenditure of energy, RUDOLPH S.FRIED. *Psychiat. Quart.* **5,** No. 3 (1931, July) pp. 499–505.

Description is given of procedures used in the Florence Nightingale School at Katonah, New York, to help the child to develop purposeful behavior. The problem is approached by teaching him first to be calm under favorable and unfavorable conditions. Assuming, then, that self-direction will develop purpose in all action and need not preclude spontaneity or individuality, the basis of all further training lies in teaching him to accept direction by others and then to direct himself. The lessons in self-mastery are applied to fears, dislikes, obsessions, and social aversions.

PHYSICAL DEVELOPMENT

The American Journal of Public Health **21,** No. 8 (1931, Aug.).

The central topic for this issue is "The Community Child Hygiene Program." Papers of special interest to child development and parental education include:

The infant before, during and after birth, RICHARD A. BOLT, pp. 843–850.

The community health program as it applies to the child from one to six years, CHARLES F. WILINSKY, pp. 851–856.

The community health program as it applies to the child from six years to adolescence, WALTER H. BROWN, pp. 857–861.

A symposium on stuttering (stammering) *Arch Pediatrics* **48,** No. 8 (1931, Aug.) pp. 533–546.

Robert West, editor for the Society for the Study of Disorders of Speech, here abstracts papers presented at the recent meetings of that society in Chicago. The 29 speakers are shown to be so divided as to their conception of the cause of stuttering and methods of treatment that they logically fall into four groups or schools of thought: those of sensory imagery, psychotherapy, pedagogy, and phenomenology.

A general information test for kindergarten children, CATHRYN A. PROBST. *Child Development* **2,** No. 2 (1931, June) pp. 81–95.

Reported is an attempt to evaluate by means of an improved technic the amount and type of general information that young children have at their command on entering the elementary school. Two general information tests given in Minneapolis to 100 children equally divided as to sex and selected to represent the various socio-economic groups within the city, disclosed marked difference in the range of information between the upper and lower halves of the socio-economic group. Sex difference appeared in favor of the boys.

A revised scale for measuring developmental age in boys, PAUL HANLY FURFEY. *Child Development* **2,** No. 2 (1931, June) pp. 102–114.

The author presents a revised scale for measuring developmental age here defined as the progressively increasing and non-intellectual maturing of general behavior which shows itself in the growing child's play preferences, fantasy life, choice of books and pictures, ambitions, and attitudes. This new scale shows more clearly that developmental age has little if any relation to mental age and only a slight positive relation to physical measurements; it also offers a less cumbersome scoring system and greater reliability.

Some conditions in the dentition of preschool children, S. IDELL PYLE and CHARLES L. DRAIN. *Child Development* **2**, No. 2 (1931, June) pp. 147–152.

The need for dental health education at an early age is emphasized by the authors in connection with records from dental examinations made at the preschool laboratories of the Iowa Child Welfare Research Station of 184 boys and 189 girls ranging in age from 18 to 77 months. Forty per cent of the 2- to 3-year-old children were 27 months old before the first dentition was completed; the relationship between the general condition of the mouth and the occurrence of cavities could not be clearly demonstrated; and no difference in the number of cavities could be attached to sex.

Relating home and school habits, AFTON SMITH. *Child Welfare* **26**, No. 1 (1931, Sept.) pp. 10–13.

Since habits and attitudes developed during the first five years of life have much to do with school habits and attitudes, the child who makes the best start in school comes from a home in which he has been made to feel independent, able to take care of himself, able to get along with people as well as accustomed to get along without his mother, and in which he has acquired interests suitable to his age. The introduction to school may also be simplified for the child if any necessary adjustment of nap or rest time, rising hour, or meal schedule has been accomplished some weeks before.

Infantile paralysis after-care, JESSIE L. STEVENSON. *Pub. Health Nursing* **23**, No. 8 (1931, Aug.) pp. 362–368.

Convalescent care of infantile paralysis may continue for months or even years; and if the long, slow process of rehabilitation is to meet with maximum success, the family must cooperate closely with the doctor and visiting nurse and acquire technical skill, as well as infinite patience, cheerfulness, and optimism. The aim of all care after the acute period is over, is to prevent deformities, to restore as much muscle power as possible, and so to direct the patient's activities that he may be helped to make the best possible use of muscle power left.

Prevalence of and correlations between physical defects and their coincidence with functional disorders, EVELYN B. SPINDLER. *Research Quart.* **2**, No. 2 1931, May) pp. 36–56.

Data from the medical and physical examinations given to all women entering the University of Wisconsin, as well as the summary of previous similar studies in the same University, show that more remedial and corrective measures are needed among growing girls in the secondary schools; that physical examination is essential to diagnosis; that certain sports tend to asymmetrical development and create lateral curvatures of the spine; that posture and special classes for the correction of individual defects should be given more attention in the secondary schools to avoid the evident progression of such difficulties and to overcome poor habits, styles, and fads affecting posture.

Promise of genius in children revealed by simple tests, MARJORIE VAN DE WATER *Science News Letter* **19**, No. 527 (1931, May 16) pp. 310–311.

That the child's first 7 years reveal whether training, study, ambition, and exhortation can make an artist of him is the tentative conclusion reached at the end of the second year of a 7-year investigation of the genesis of art talent by a group of psychologists at the University of Iowa.

K. K.

ECONOMIC AND SOCIAL PROBLEMS OF THE HOME

On the content of welfare, A. B. WOLFE. *Am. Econ. Rev.* **21,** No. 2 (1931, June) pp. 207–221.

The author believes that one of the most important problems confronting economists today is to define welfare and to study the relationships existing between this and economic institutions, processes, and valuations. This problem cannot be turned over entirely to the ethicists, since it is fundamental in the study of consumption. Research in the field of the standard of living should take account not only of the kind and amount of goods and services consumed, but also of the cost of our standard in labor and lost leisure. John A. Hobson in his recent book *Economics and Ethics* has done valuable work in this field but has not satisfactorily described the content of welfare.

American Journal of Sociology **36,** No. 6 (1931, May).

This entire issue is devoted to an appraisal of social changes during the year 1930, it being the fourth year such a summary has been made. Two of the most interesting articles are:

The family, ERNEST R. GROVES, pp. 993–1001.

The main events in the history of the family during 1930 have been: the White House Conference on Child Health and Protection; the increased interest in parental education; the organization of the Institute of Family Relations by Paul Popenoe, and the increase in "marriage clinics" established by churches; the encyclical of Pius XI restating the traditional stand of the Catholic Church on divorce and birth control. A list of research finished and in progress is also given.

The status of women, CHASE GOING WOODHOUSE, pp. 1011–1016.

In politics, reports show that there were 9 women in Congress in 1931, but there will be only 6 in the 72nd Congress. In state legislatures there are 145 women members. Women's organizations supported the Jones maternity and infancy bill, and for the most part opposed the equal rights amendment. While there has been some revival of interest in labor laws protecting women, few important laws have been passed. The data from the 1930 census show an increase in the number of earning women, 27 per cent of those between 16 and 64 now being employed. The need for vocational guidance of women is more marked than ever before.

The following articles are also of interest: "The Child," by Lawrence K. Frank; "Rural Life," by Bruce Melvin; and "Social and Labor Legislation," by Samuel McCune Lindsay.

Differential age at marriage according to social class, FRANK W. NOTESTEIN. *Am. J. Sociol.* **37,** No. 1 (1931, July) pp. 22–48.

This study of unpublished census data carried out by the Research Division of the Milbank Memorial Fund has given us our first large scale statistical research concerning age at marriage of women of different social groups. Classification according to social status was based upon the occupation of the husband. Records of 17,896 women of native white parentage were studied. It was found that rural women married younger than urban, the average age at marriage of the former being 21.4 years and of the latter 22.4 years. In both the rural and urban groups, the age at marriage was higher in the higher social classes than in the

lower. The average age of wives of professional men at marriage was 24.8 years, while that of the wives of unskilled laborers was 21.4 years. In rural families the average age of wives of farm owners at marriage was 22.3 years, while that of wives of farm laborers was 20.1 years. This may account to some degree for the greater fertility of lower social classes.

The economic status of families of delinquent boys in Wisconsin, MORRIS GILMORE CALDWELL. *Am. J. Sociol.* **37**, No. 2 (1931, Sept.) pp. 231–239.

The study of the economic status of families of 492 delinquent boys in Wisconsin indicates that these boys came mainly from low-income families. Sixty-seven per cent of the parents were in unskilled occupations as compared with 53 per cent of the general population. Of 105 families studied intensively, only 9 had incomes of $2,500 and over. The mothers of 23.2 per cent of the boys were earning outside their homes. In 11.1 per cent of the cases studied, the mother was dead, insane, or unknown. The proportion of these boys gainfully employed at an early age was considerably greater than in the general population. This employment at an early age may have been a factor affecting delinquency.

A study of incomes, emergencies and credit in dependent families, HELEN I. CLARKE. *The Family* **12**, No. 3 (1931, May) pp. 92–94.

This study was undertaken by students of the University of Wisconsin under the direction of faculty members to collect facts concerning types of situations leading to the breakdown of the income and need for relief or for credit. Seventy-five families were investigated, and while the author believes this number is too small to show trends, the findings are of interest to students of family finance. The average monthly wage income of these families was $92. Unemployment and illness were the two main causes of financial distress. Of the emergencies leading to the necessity for increasing the income more than one-half affected the wage earners. The families augmented their incomes by loans, charge accounts, or installment buying. Forty per cent of the charge accounts were for medical care.

Has Engel's law its limitations? POVL HEIBERG. *J. Am. Statistical Assoc'n* **26**, No. 174 (1931, June) pp. 175–176.

In reviewing the material from the Danish family budget investigation of 1922, the author found that the expenditures of families of two members (man and wife) did not follow Engel's law, "The poorer the family, the greater the proportion of its income spent for food." Chapin's study of low-income families in New York City in 1907 revealed a similar lack of agreement with Engel's findings. In the Danish families savings were very important, being from one-third to one-half of the income in some cases. The author believes that this is one reason why Engel's law did not hold true, as in Engel's study the savings of the families were negligible. The rentals of the Danish families also represented a greater proportion of the income than those in the families studied by Engel.

A family consultation service, PAUL POPENOE. *J. Soc. Hyg.* **17**, No. 6 (1931, June) pp. 309–322.

In February, 1930, there was opened in Los Angeles the Institute of Family Relations, the first marriage counsel bureau in the United States. It has attempted to give information to persons seeking it before marriage and to aid the married in solving their problems. While sexual

maladjustment has been found an important cause of marital disharmony, the two most frequent secondary sources of friction were disagreement concerning finances and disagreement concerning the spending of leisure. The author believes that more education concerning budgeting and use of leisure, as well as sex education, would be helpful to persons of both sexes contemplating matrimony.

Family allowances for college professors and ministers. *M'thly Labor Rev.* **32,** No. 6 (1931, June) pp. 1381–1382.

A family allowance scheme which has been in operation for several years at Wells College provides that any member of the faculty who is married and supporting a family shall receive an additional $1,000 for spouse and $250 for each dependent child under twenty-one. This applies to women as well as men. A somewhat similar system has been proposed for Bennington College. The London School of Economics makes annual grants to its teachers of about $150 per child aged 6 to 13 years, and increases this for children 13 to 23 who are in school. For years some churches have paid ministers allowances for their children.

The employment of women, AMY G. MAHER. *Soc. Service Rev.* **5,** No. 1 (1931, March) pp. 28–36.

A review and interpretation of three recent studies of the gainful employment of women: *Women in Gainful Occupations, 1870 to 1920,* made by the U. S. Bureau of the Census; *Variations in Employment Trends of Women and Men,* made by the Women's Bureau; and *A Study of the Factors which Have Operated in the Past and Those which Are Operating Now to Determine the Distribution of Women in Industry,* made by the British Home Office. It is of interest that this last study made in England agrees with the findings from a more extensive, similar study made in this country by the Women's Bureau. Both show that in relatively few instances has the law prohibiting the employment of women at night led to their exclusion from jobs. "Where the work is hot, heavy, dirty, or wet, or where skill only to be acquired by long training is needed, the processes are for the most part carried out by men." The type of work, rather than legislation, seems to determine what work shall be done exclusively by men.

Rural standards of living in Portage, Langlade, and Sawyer Counties, Wisconsin, E. L. KIRKPATRICK, P. E. MCNALL and MAY L. COWLES. *Stencil Bull.* 108, College of Agriculture of the Univ. of Wisc. (1931, March) pp. 20.

This is a partial report of a study of standards of living in farm homes in three Wisconsin counties. The data are anlyzed to show: average number of persons per family, average age and schooling of operators and homemakers, cash receipts and expenditures for farms, value of goods and services used in family living, value of goods and services furnished by the farm for family living, cost of clothing per person for different age groups, average number of rooms in house, and percentage of homes having central heating and other equipment. There is a brief comparison of expenditures of owners and tenants.

D. M.

FOOD AND NUTRITION

Contributed by the staff of the Nutrition Section, Bureau of Home Economics, United States Department of Agriculture

Excessive ultraviolet irradiation. Effect on the nutrition and the endocrine glands of rats, A. F. HESS and P. E. SMITH. *Am. J. Diseases Children* **41**, No. 4 (1931, April) pp. 775–782.

"Two series of rats were irradiated with the mercury vapor lamp for a period of from five to six months or were given viosterol. Male as well as female animals were used; those in the first series were litter mates, those in the second series, although not litter mates, were the progeny of the first. Three intensities of irradiation were given: mild, moderate, and severe. The viosterol was given in small as well as in excessive amounts. The main object of the experiment was to note whether prolonged and intense irradiation or large doses of viosterol had a deleterious effect on the animals, as evinced by the rate of growth and by the size and appearance of the endocrine glands.

"The growth of the animals subjected to marked intensities of ultraviolet irradiation or given large amounts of viosterol was as good as that of animals which had lived under similar conditions but had not been subjected to irradiation or given viosterol. No difference was noted at necropsy between the endocrine glands of the treated and those of the untreated animals."

The precise evaluation of light therapy in experimental rickets, J. W. M. BUNKER and R. S. HARRIS. *Am. J. Pub. Health* **20**, No. 12, (1930, Dec.) pp. 1287–1292.

After more than 2 years' work with over 800 rats, the authors have come to the following conclusions: (1) All diets given to animals used for the precise evaluation of light therapy in rickets must be carefully standardized. (2) If yellow corn meal diet recommended by Vitamine Assay Committee of Drug Manufacturer's Association (*J. Am. Pharm. Assoc'n* **19**, p. 616, 1930) be employed, the corn meal must be aged for 6 months before use. (3) Selective absorbing filters must be carefully standardized and compensation made for limitations thereof. (4) Contrary to general belief, the antirachitic effect of light in rickets prevention in white rats is not confined to the zone of the ultraviolet in the neighborhood of 3,000Å and other parts of the spectrum from the mercury arc lamp are evidently contributory.—C. H. M.

The nature of the proteins and lipids synthesized by the colon bacillus, H. C. ECKSTEIN and MALCOLM H. SOULE. *J. Biol. Chem.* **91**, No. 1 (1931, April) pp. 395–404.

"1. It has been definitely established that Bacillus coli Jordan when grown in air can synthesize the amino acids arginine, histidine, and lysine from a medium containing only one source of nitrogen, namely d-alanine.

"2. They can likewise synthesize tyrosine and tryptophane from media in which the sources of nitrogen are restricted to either d-alanine or l-cystine.

"3. Presumptive evidence is available pointing to the synthesis of arginine, histidine, lysine from a medium containing nitrogen only in the form of l-cystine.

"4. No evidence of the synthesis of cystine from d-alanine was obtained. Almost all of the data presented point to the synthesis of proteins containing cys-

tine when that amino acid was added to the medium.

"5. The lipids synthesized by the bacteria from 'fat-free' media may be characterized by their low iodine numbers and by the absence of common sterols and fatty acids more highly unsaturated than oleic acid.

"6. The colon bacilli developed on the alanine medium synthesized considerable amounts of the phospholipids, whereas those grown on a medium containing cystine had only a trace of such lipids."

The metabolic rate and respiratory quotients of rats on a fat-deficient diet, LAURENCE G. WESSON and GEORGE O. BURR. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 525–539.

"1. The metabolic rate and respiratory quotient following a carbohydrate test meal have been determined in the case of rats maintained for some time on a fat deficient diet, and are compared with those obtained on normal rats and under approximately the same conditions.

"2. The respiratory quotients in the 1st hours following the carbohydrates feeding are in many cases well above unity, definitely indicating the formation of fat from carbohydrate by these rats in various stages of the fat-deficiency disease.

"3. The fact that no relief is obtained from symptoms of the fat-deficiency disease by the fat thus formed from carbohydrate indicates that the curative linolic and linolenic acids are not formed by the rat from the carbohydrate or fat.

"4. The basal and assimilatory metabolic rate in the case of rats showing the early symptoms of the fat-deficiency disease was well above the normal value, while the metabolic rate in the later stages of the disease was normal or subnormal.

"5. The possible relationship of thyroid activity to several phases of the fat-deficiency disease is discussed."

A study of certain properties of the provitamin A. E. J. QUINN and J. G. HARTLEY. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 633–639.

"The provitamin A may be readily adsorbed from petroleum ether extracts of dried carrots by both norit and Lloyd's reagent. The adsorbed pigment can be removed very readily from the norit by extraction with chloroform but very little appears to be dissolved by ethyl ether. Ethyl ether removes more of the adsorbed color from Lloyd's reagent residue than does chloroform. Due to the unstable nature of the pigment in chloroform solution, the desirability of using this solvent in work of this kind is questioned. The vitamin factor adsorbed on norit is readily dissolved and extracted by peanut oil. This oil was found, however, to extract little or none of the potent factor adsorbed on Lloyd's reagent. It was found that rats fed on norit containing the adsorbed vitamin were able to remove and utilize some of this vitamin. Rats were apparently unable to extract any of the factor which had been adsorbed on Lloyd's reagent. There is a possibility, however, that the vitamin that has been adsorbed on this last named adsorbent was destroyed, perhaps by oxidation, at some stage in the test period."

Metabolism of women during the reproductive cycle. IV. Calcium and phosphorus utilization in late lactation and during subsequent reproductive rest, E. DONELSON, B. NIMS, H. A. HUNSCHER, and I. G. MACY. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 675–686.

"Calcium balance determinations for

three women during the later part of a lactation period in which there had been long continued, intense milk flow, indicate a loss of calcium, in contrast to a storage of the element at corresponding periods in the preceding lactation period of each woman, in which there was a long, progressive decline in the output of milk. There was a storage of phosphorus in all cases at the close of 14 months of lactation. During the post-lactation periods, at the 3rd and 12th months after cessation of milk flow, calcium losses and phosphorus storage were indicated."

Nutritive value of potato protein and of gelatin, D. BREESE JONES and E. M. NELSON. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 705–713.

"Feeding experiments were conducted with rats with the object of ascertaining the nutritive value of potato protein. The material fed was a preparation containing 3.48 per cent nitrogen and representing all the constituents of the potato except most of the starch and one-half of the washed pulp. When this preparation, fed at a level of 9 per cent of crude protein, furnished the sole source of nitrogen in a diet adequate with respect to the essential dietary factors other than protein, only maintenance resulted. Addition to the diet of as much as 20 per cent gelatin, either alone or together with a mixture of cystine (0.2 per cent), tyrosine (2.0 per cent), and tryptophane (0.5 per cent) caused no improvement in the rate of growth. On the other hand, addition of 10 per cent casein or lactalbumin enabled the animals to grow at a normal rate. It is concluded that casein and lactalbumin contain some essential dietary factor which was lacking in the potato preparation and in gelatin, and which is not one of the known amino acids."

Studies of the metabolism of women. V. The components concerned in the cyclic variations in the level of total non-protein nitrogen in the blood of normal women, S. E. ERIKSON and RUTH OKEY. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 715–722.

"1. There is at the time of onset of menstruation in normal women a rise in total non-protein nitrogen of circulating blood, varying as a rule from 5 to 15 mg. in individual cases.

"2. This increase in concentration of non-protein nitrogen is not accounted for by urea, uric acid, creatine, creatinine, amino acid or adenine nucleotide nitrogen. Hence it involves chiefly the 'rest' nitrogen."

The comparative antirachitic and calcifying properties of irradiated milk and and milk derivatives, G. C. SUPPLEE, G. E. FLANIGAN, O. J. KAHLENBERG, and ALFRED HESS. *J. Biol. Chem.* **91**, No. 2 (1931, May) pp. 773–790.

An investigation was conducted for the purpose of obtaining an estimation of the ergosterol or provitamin content of milk and a comparison of the activatibility of certain milk derivatives.

"Negative antirachitic and calcifying properties were obtained from the irradiated non-saponifiable fraction of milk fat, as determined by the curative method with white rats and the preventive method with chickens. Milk irradiated in fluid form and subsequently dried by the double roller process showed marked antirachitic properties. The degree of potency which may be imparted to milk irradiated in fluid form is, with limitations, determined by the fat content and period of exposure, other things being equal. An irradiation period of only a few seconds is sufficient, under suitable conditions, to activate a particular milk sample to a high percentage

of its potential maximum. This degree of activation is attained without detectable change in taste or odor. The negative results obtained from the irradiated non-saponifiable fractions of milk fat as contrasted with the positive character of the results obtained from irradiation of the natural milk, butter fat, and a fat-casein-albumin-free, water-soluble fraction of milk, provide further evidence of the difficulties encountered in the preparation of antirachitic concentrates from known activatible natural products. The use of chickens and the basal ration containing a uniform amount of milk solids supplying a natural balance of milk constituents provides a method of particular merit for the study of antirachitic and calcifying properties of activated milk or milk derivatives. Any attempted explanation of the failure of the irradiated non-saponifiable fractions to show the anticipated antirachitic activity must, therefore, center around speculative possibilities attending the manipulations of preparation. Oxidation of the provitamin prior to extraction might be suggested by the fact that the nonsaponifiable fraction of butter oil gave relatively better results than similar fractions obtained from the fat extracted from milk powder. The relative difference in these results however does not entirely exclude the possibility that the solvent failed to free the provitamin from the non-fatty constituents of the milk powder."—E. P. D.

The vitamin B and G requirement of lactation, D. H. HUSSEMAN and R. A. HETLER. *J. Nut.* **4**, No. 1 (1931, May) pp. 127–140.

Experiments on the vitamin requirements of lactation have shown that both vitamins B and G must be present in the diet to insure successful rearing of young. The maintenance level of 5 per cent untreated yeast has been supplemented by varying amounts of either autoclaved yeast as a source of vitamin G free of B, or by tikitiki as a source of vitamin B containing some vitamin G. Since equally successful results followed in both cases, it is possible that vitamin G is the more important factor for lactation.—G. M. D.

HOUSEHOLD EQUIPMENT AND MANAGEMENT

Engineering's contribution to the farm home. DEANE G. CARTER. *Agr. Eng.* **12**, No. 6 (1931, June) pp. 225–226.

A review of some of the recent studies in architecture, agricultural engineering, and home economics designed to develop and establish standards for the farm home. These include the factors which differentiate the farm home from the rural home, the time women work, equipment for labor saving, sanitation, and a survey of the agencies and individuals working in the field. Outstanding needs are held to be further research and its coordination by a single agency, development of minimum standards for adequate farm living, application of the principles of architectural design to farm homes, and research in social and economic phases of the home.

Architectural Forum **55**, (1931).

The small house—a problem to be solved, NORMAN N. RICE. No. 1 (July) pp. 1–6.

Small house construction—a problem to be solved, NORMAN N. RICE. No. 2 (August) pp. 217–222.

A comprehensive analysis of the problems involved in producing a small house of high quality and adequate size at a cost around $3,000—a sum within the financial means of the average American family. The author feels that the solution lies in acceptance of the principle of rationalized and industrialized manufacture under unified organization; determination of the biological and structural standards essential to family living; provision for residential areas as part of a good city plan, properly zoned, intelligently and economically subdivided; and satisfactory and inexpensive home financing. The structural and planning possibilities of the fabricated house are discussed in detail, with illustrations from recent constructions.

The fabricated house, WALDRON FAULKNER. *House Beautiful* **70**, No. 3 (1931, Sept.) pp. 216–217, 246 +.

Economy of construction for the future requires a fabricated type of building of factory-made, standardized parts, made in large quantities, erected at the site. The sections should be interchangeable, so that they may be arranged in various combinations, added to or taken apart with ease. The construction would include steel frame, to which could be bolted steel plates; sheets of insulation cut to fit; steel casement windows with double glass; steel plates for floors, insulated and covered with composition flooring; flat roofs; no cellar space; electrically or gas-fired hot-air heating system; insulated water pipes. Such construction would provide comfort, be durable, fire resisting, sound absorbing, fully insulated against heat or cold, and require a minimum of upkeep. It could be erected and finished in a few days, and its cost be within reach of the low income group.

Public utility and private housing activity. The social importance of housing, F. M. WIBAUT. *Housing & Bldg.* **3**, No. 3 (1931) pp. 114–134.

A summary of the preliminary reports submitted by European housing authorities as the basis for discussion at the International Housing Conference in Berlin, which covers these fields: (a) residence building and its promotion on the part of the state, the communities, and public utility building societies; (b) the management of dwellings by the local authorities and public utility societies, and the social and cultural work which

has developed out of the building and management of dwellings; (c) the extent to which under present conditions private building enterprise on a profit-producing basis is able by itself to provide the necessary dwellings for the broad masses of the population in a way which will satisfactorily fulfill all economic, social, hygienic, and other modern requirements. The consensus of opinion is that "private building enterprise is absolutely unable without the support of public means to provide the necessary building accommodations for the broad masses of the population at reasonable rents" and demands the further development of an active housing policy on the part of public bodies.

A welded-steel-frame house. *Literary Digest* **109,** No. 13 (1931, June 27) p. 32.

Construction details are given of the first electric-arc welded steel frame dwelling. It has two stories—six rooms, full basement containing two-car garage—and is built on a stone and concrete foundation.

Workingmen's housing in Vienna, ERNEST L. HARRIS. *M'thly Labor Rev.* **32,** No. 5 (1931, May) pp. 6–16.

A detailed study of Vienna's post-war municipal building program which has resulted in the construction of about 40,000 residences in the past seven years. Funds are provided by a residential construction tax which amounts to about $13,000,000 annually. The plan provides competitive bidding with municipal supervision of building, municipal testing and transportation of materials, use of uniform doors and windows. The cost per unit dwelling is about $2,000; the rentals, about one fifth pre-war figures, are about one dollar per month for 409 square feet of useful floor space. Ample park space is provided adjoining the buildings; and frequently bath houses, steam laundries, kindergartens, libraries, social halls, and health centers. The income from rentals provides for all costs except a return on the capital invested.

Gas house-heating, F. C. TAYLOR. *Am. Gas Assoc'n M'thly* **13,** No. 8 (1931, Aug.) pp. 341–342.

Stresses the value of auxiliary burners to be installed in existing furnace or boiler, for use during spring and fall to supplement solid fuel.

Selection and management of kerosine cook stoves, E. B. SNYDER. *Nebr. Agr. Exp't. Sta. Circular* **41,** 1930, pp. 14.

Kerosine cook stoves with long chimney wick, short chimney wick, and short-chimney lighting-ring, and also wickless types, are described and their advantages and disadvantages discussed.

New domestic unit used to heat, cool, and ventilate. *Refrigerating Eng.* **22,** No. 1 (1931, July) p. 36.

Description of an atmospheric cabinet designed to heat, humidify, and ventilate in winter and cool, dehumidify, and ventilate in summer. It provides for connections with the heating and cooling mediums, drains, and power. The air may be recirculated from the room or introduced from outside through a filter. Fans keep the air in constant circulation.

Automatic stokers in the home, C. W. EDWARDS. *Small Home* **11,** No. 7 (1931, July) pp. 16–17, 30.

Solid fuels are successfully fired by automatic machines of various types as described here. They may be installed under the present heating plant burning either anthracite or bituminous coal to supply steam, hot water, or hot air heat.

Characteristic types are described and illustrated.

Electric water heating for domestic service, A. L. S. BARNES. *Elec. News & Eng.* **40,** No. 14 (1931, July 15) pp. 41–43.

It is shown possible to increase domestic consumption of current by installation of water heaters, to keep them off the station peaks, either by the use of time switches in year-round service, or by creating a purely summer load where furnaces are used for winter water heating. The cost of electric heat is greater, but with adequate heat insulation of tank and hot water pipes and with water temperature kept as low as practicable, it is not prohibitive.

Novel water heater, A. EKSTROM AND V. EKSTROM. *Elec. Rev.* **109,** No. 2801 (1931, July 31,) p. 172.

Description of a Swedish electric water heater which has the heating unit outside the storage tank. The cold water passes through the unit slowly enough to be heated to the desired temperature before entering the tank, thus avoiding the mixture of cold water with hot as water is drawn off. The thermal insulation of the tank is sufficient to keep water hot two days, and the water drawn is always of the right temperature. The current is automatically controlled, and operating costs are twenty per cent less than with other types.

The automatic underfeed coal stoker for domestic heating, H. J. DANA. *Eng. Exp't Sta., Wash. State Coll. Bull.* 27, (1929) pp. 19.

Results of tests show that with this type of stoker, coal is burned more efficiently and a smaller amount of fuel required during the heating season. However, with the convenience and ease of operation, owners tended to maintain more comfortable and uniform temperature than under hand-stoking methods and actually burned as much coal as before. A grade of coal costing 30 to 40 per cent less than lump coal used in hand firing was successfully handled by the stoker.

Construction of chimneys and fireplaces. *U. S. Dep't Agr. Farmers' Bull.* 1649 (1930) pp. 29.

A revision which supersedes *Farmers' Bulletin* 1230. Presents practical information on the planning and construction of fireplaces and chimneys.

How homes are cooled in summer, W. W. STEVENS. *Domestic Eng.* **136,** No. 5 (1931, Sept. 5) pp. 30–35.

A description, with illustrations, of the air conditioning plant under test in a seven-room Chicago house. Air is cooled by passing over water coils and mixed with a smaller volume dehumidified by silica gel, the circulating air being about 13°F. lower and 30 per cent less humid than that outside.

Electric refrigerators and electric refrigeration, CHARLES H. ROE. *Ice & Refrigeration* **80,** No. 6 (1931, June) p. 473–474.

A survey of recent developments in household refrigeration and the place of the electric refrigerator, with emphasis upon the importance of reliable information on refrigerator performance and cost of operation. To secure this information, a test code by which these machines may be graded must be developed. Such a code should include determination of internal temperatures, energy consumption, frequency of operation, and durability under uniform laboratory conditions. The author holds it to be an obligation of the electrical industry to determine these

facts and to pass them on to the consumer to help him to buy intelligently.

Relation of humidity in refrigerator to keeping of foods. G. ALLEBRAND, H. L. TITUS, and L. I. BELCHER. *Ice & Refrigeration* **81**, No. 1 (1931, July) pp. 6–8.

Report of two experiments made in an effort to determine differences in temperatures, humidity, and food preservation in comparable refrigerators, one ice-cooled and the other a chemical refrigerator, kept under uniform room temperatures. With no food under refrigeration, the ice box showed a temperature range from 49°F. to 44°F., average 47°F; the chemical box, 46°F. to 42°F, average 46°F. Filled with food the first gave a temperature range from 48°F. to 43°F.; the other, 45°F. to 41°F. Average humidity in the empty ice box was 80 per cent; in the chemical box, 56 per cent; filled with food the former, 91.6 per cent, and the latter, 72.8 per cent. Losses in food weights after three and after seven days show greater dehydration in the chemical box, with a corresponding loss in appearance of the food. No data on food spoilage are given. None of the foods in either refrigerator were wrapped or covered.

The use of paper as a refrigerator insulation, J. L. KNIGHT. *Refrigerating Eng.* **22**, No. 2 (1931, Aug.) pp. 88–89.

Paper is shown to be a light, efficient, adaptable, and economical insulation if carefully made of the best materials and properly sealed in the cabinet. A recommended arrangement calls for flat sheets of paper held one-tenth of an inch from one another by means of corrugated paper (three corrugations to the inch), these to be encased in a stout carton made exactly to size and dipped in a bath of melted petrolatum wax. When installed with effective sealing of the insulation space from the outside air, a cabinet so insulated operated efficiently for months in a high humidity atmosphere.

N. E. M. A. proposes standard methods for computing refrigerator volume. *Refrigerating Eng.* **22**, No. 3 (1931, Sept.) p. 180.

The methods recommended for computing gross volume, net food storage volume, and the food shelf area of domestic refrigerators as submitted by the technical committee of the refrigeration section of the National Electrical Manufacturers Association to the members of that body for adoption.

Refrigeration by ice, SUSA P. MOORE. *Small Home* **11**, No. 6 (1931, June) pp. 20–21, 27+.

A comprehensive popular discussion of recent developments in design and construction, with guides for selection and proper utilization of ice refrigerators.

A study of washing machines, EDNA B. SNYDER and MORTON P. BRUNIG. *Nebr. Agr. Exp't Sta. Research Bull.* 56 (1931, May) pp. 44.

The performance and constructional features of four types of washing machines (dolly, gyrator, cylinder, and vacuum) were studied with regard to: (1) cleansing action, (2) wear on fabric, (3) heat retension, and (4) constructional features adding to convenience of operation. Under uniform test conditions as outlined, specimens washed in the cylinder and vacuum machines showed maximum brightness; dolly machines, lowest; the gyrator types gave greatest cleanness in least time; the cylinder and vacuum types took longest. Each machine showed an optimum load and an optimum washing period. When that

time was exceeded a redistribution of dirt apparently occurred. Medium temperatures (about 125°F.) gave best results. Gyrator machines caused least wear on the clothes and dolly machines most, though the differences were slight except in one case. No significant differences were shown in the rate of water cooling. Improvement is needed in constructional features to provide greater convenience and efficiency in all types studied.

Prüfung von Waschmaschinen. [Testing of washing machines], HELENE PAUL. *Hauswirtschaft in Wissenschaft und Praxis* **4**, No. 1/2 (1931, June) pp. 1–11.

A detailed account of methods used for the testing of washing machines at the testing station of the Federation of German Housewives' Associations in Leipsic. The tests on washing machines were commenced in 1927. Factors considered are heat and energy consumption, construction, time and effort required, wear on clothes, and cleaning ability. Special attention was paid to tests with artificial soiling compounds, and the composition of the one now used is given.

Der Stand der hauswirtschaftlichen Rationalisierung in Frankreich. [The status of the household standardization movement in France]. C. H. DESMULIE-ENNESCH. Beilage Zur Deutschen Werkmeister-Zeitung, No. 28, 1931. [abs. in *Archiv für Hauswirtschaft* **4**, No. 3 (1931, July)].

In France the household standardization movement is stronger in theory than in practice. The individualistic trait in the French character favors the unusual, "that which the others cannot have." The Organisation Ménagère (Housewives' Association) is held of great practical importance in that it has led the housewives into public life.

Rationalisierung der minderbemittelten Hauswirtschaft. [The standardization of homes in the low income class], DR. MARIA SILBERKUHL-SCHULTE. *Blätter für Lebenswirtschaft und Lebensunterricht* **4**, No. 2 (1931) pp. 40–48.

One of the hardest problems to solve is that of the standardization of homes with low incomes. There are two main ways of approach: (1) the standardization of buying and use of goods, (2) and the scientific study of work procedures. The quick spending of weekly wages must be prevented by building up a reserve, which will allow for buying in larger quantities and the purchase of more expensive and durable articles. The complex questions arising in such cases cannot be solved by such families themselves without the advice of home management consultants.

L'Organisation Scientifique du Travail; IVe Congres Internationale, Paris, 1929. [Scientific Management; Fourth International Congress, Paris, 1929]. Comité National de L'Organisation Francaise, 78, rue du Ranelagh, Paris XVI.

The complete report of the International Scientific Management Organization's meeting in Paris, including the section on home management. This division met for three days under the chairmanship of Mademoiselle Paulette Bernège to hear reports on the housekeeping problem in general, correct nutrition, sweeping of floors, ironing of clothes, household accounting, and fatigue, given by delegates from several countries.

Colors for sanitary ware. *Commercial Stand. M'thly* **8**, No. 1 (1931, July) p. 21.

Having been accepted by a majority

of producers, the proposed standard for colors for sanitary ware became commercially effective July 1. Six standard colors are listed: green, orchid, ivory, blue, light brown, and black; and samples giving the light and dark limits of the shades are obtainable. The aim is to provide an authoritative basis for determining and checking colors for sanitary ware and to protect the purchaser against a lack of color harmony, especially where different manufacturers supply the fixtures used.

Federal grade label for packaged meats. *Commercial Stand. M'thly* **8,** No. 1 (1931, July) p. 26.

A recent innovation in retailing of meat is the individual cut offered in a sanitary transparent wrapper labeled with the appropriate "U. S." grade which certifies the quality of the lamb or beef so offered. This is an extension of the beef grading and stamping service inaugurated by the Bureau of Agricultural Economics for the purpose of carrying the grade designation from packer to consumer.

C. R. E. A. Bull. **6,** No. 1 (1931, June).

Report on farm electrification research —household, pp. 34–36.

Research studies in electrical utilization for household purposes are described: thirteen have to do with ranges, giving fuel comparison and temperatures; two with vacuum cleaners; two with dishwashers; three with kitchen equipment; four with laundry processes; four with household management; and five with miscellaneous uses of electricity. Further study should center on the effectiveness of electric equipment to produce added leisure, relief from drudgery, better home management, rather than on the perfection or operating cost of the equipment itself.

Home refrigeration, p. 56.

Four studies noted.

Domestic and general water heating, p. 66.

Eight studies of domestic water heating.

The E. A. W. at Glasgow. *Elec. Rev.* **108,** No. 2793 (1931, June 5) pp. 949–950.

Report of the Second International Conference of the Electrical Association for Women, with summaries of the reports on the use of electricity in the home, as given by representatives from the National Housewives' Association of Sweden, the French League for Scientific Management of the Home, and the Copenhagen Housewives' Association of Denmark.

The magic touch of color and design, F. A. WILLIAMS. *Executives Service Bull.* **9,** No. 6 (1931, June) pp. 5–6.

An account of the methods by which Cannon Mills increased sales by deliberately making women "towel conscious" through extensive advertising and the use of color and "styling." No improvement in quality of goods was attempted, the aim being only to increase the annual expenditure per family for towels, an effort which the writer, vice-president and treasurer of the company, asserts to have been entirely successful.

Lebensmittelkonservierung im Haushalt. Sind die mit Luftverdünnung arbeitenden Konservierungsapparate zu empfehlen? [Food preservation in the home. Should apparatus which reduces air pressure be recommended?] H. OESTERMANN. *Hauswirtschaft in Wissenschaft und Praxis* **4,** No. 1/2 (1931, June) pp. 11–16.

In the last decade several types of apparatus for preservation of foods have

been widely sold, which, according to the claims made, do not require the usual canning methods; instead, the food is prepared and placed as hot as possible in jars from which air is then removed by means of an extraction pump. A series of tests were conducted at the testing station of the Federation of German Housewives' Associations, and the conclusions were that such apparatus should not be recommended; the foods did not keep, except in the case of such acid fruits as gooseberries and sour cherries.

Über die Möblierung von Küchen. [Concerning kitchen furnishings], DR. HILDEGARD GRÜNBAUM-SACHS, *Hauswirtschaftliche Jahrbücher* **4**, No. 3 (1931, Aug.) pp. 65–73.

The advantages and drawbacks of various types of kitchen furniture are treated in detail. In modern small kitchens, doors to closets and cabinets present difficulties. There is danger of over-organization by placing in closets too many shelves, hooks, and other contrivances, which do not permit of flexible arrangements. The frequent use of locks and keys in closets is also unnecessary. The traditional use of white painted furniture is not practical; gray is depressing and conceals dust too readily. Investigations should be undertaken to show which, if any, shade of blue keeps flies away.

Die Rationalisierung der ländlichen Hauswirtschaft zur Verbesserung der Lebensbedingungen der Landfrauen. [The standardization of the rural household to improve the living conditions of rural women], LISELOTTE KUESSNER-GERHARD. *Hauswirtschaftlicher Beratungsdienst* **2**, No. 1 (1930, Jan.) pp. 1–2.

The economic depression which, since the World War, has hit agriculture in nearly all European countries, is especially felt by the rural women. While the small South German farmer works on an average 13 hours a day, his wife works from 14 to 15 hours. In most countries rural women's organizations are actively engaged in improving these conditions. As German farm women in the coming years will have to work hard to help increase the productivity of the farm, it is important to facilitate their housework. The scientific study of home management has, however, just begun, and basic principles are often ignored. Improvement may take place through labor saving machinery and efficient planning of work rooms and working procedures. Home management consultants employed by women's organizations aid in this. The high cost of labor-saving machinery is a serious hindrance, and appliances are particularly recommended which, like certain electrical cooking apparatus, are not unduly expensive and yet make it possible for the housewife to leave the kitchen for long periods.

Reichskuratorium für Wirtschaftlichkeit, RKW Veröffentlichungen Nr. 75; Jahresbericht 1930. [National Board for Scientific Management, RKW Publications No. 75; Annual Report, 1930].

This report includes an account of the activities of the division on home management, which, like those reported last year, include cataloguing of literature, technical investigations, and an educational service. Household lighting has been added to the investigations previously under way.

Pressstoff im Haushalt. [Pressed goods in the household]. *Neue Hauswirtschaft* **1**, No. 7 (1931, July) p. 119.

Several firms are now bringing on the market a non-breakable, acid-resisting,

heat insulating material which is excellently suited for household articles. It has hitherto been used for parts of electrical appliances and loud speakers; it it now used as a substitute for glass and china, as drinking glasses, cups, and dishes of all kinds, and is found in a variety of forms and colors. The smooth surface is easy to keep clean, and dishes with hot food are handled without difficulty, due to the low conductivity.

Small Home **11,** (1931).

White metal equipment in the kitchen, E. C. BADEAU. No. 7 (July) pp. 20–21.

Small stoves and cookers that contribute to summer coolness, ELLEN JEFFREY. No. 8 (August) pp. 12–13, 28.

The modern laundry, ELLEN D. WANGNER. No. 8 (August) pp. 18–20.

Incineration for the home, A. B. LINCOLN. No. 9 (Sept.) pp. 8–9, 31.

Transforming the old-time hole in the wall, ELLEN JEFFREY. No. 9 (Sept.) pp. 20–22, 31.

Paper on our walls, ELLEN D. WANGNER. No. 6 (June) pp. 12–14, 26.

Surveys of market offerings and especially recent developments in household equipment, illustrated by excellent photographs, with names of manufacturers or dealers.

Comment assurer le developpement de la consommation domestique d'electricité. [How to assure the development of the household consumption of electricity], M. ANTOINE. Proceedings of the Third Congress of the Union Internationale des Producteurs d'Énergie Électrique, (26, rue de la Baume, Paris) held in Brussels, Sept. 1930.

A considerable, though undetermined, increase in the use of electricity in the household is anticipated and is desirable from the point of view of the producer and distributor because of the much greater stability in domestic as compared with industrial demand. To insure rapid growth it is necessary to use mass production methods for electric appliances which are reliable, durable, automatic, and flexible in use, and which possess marked advantages over appliances utilizing other sources of energy or heat. The most important point for the producers to consider is to fix rates which allow electric current to compete with other forms of heat and energy. In the future, rates will be uniform for all domestic appliances, including light, with the possible exception of night current used for heating water. Close contact with the public for the purpose of education is indispensable. Increase in consumption of current depends upon constant use of appliances; it is, therefore, to the interest of distributors to see that such appliances are properly cared for.

Baking vegetables electrically, VENONA W. SWARTZ. *Wash. Agr. Exp't Sta. Bull.* No. 251 (1931, Feb.) pp. 19.

Recommendations are presented as a result of these studies covering the selection of an electric oven, with regard to factors of insulation, lining, hand-controlled moisture, vent, and temperature regulator; selection of utensils with regard to speed and efficiency (case iron, glass, and china ranked high); methods of cookery and costs of oven cooking. It is shown that price and performance in oven utensils are not related, that the flavor and texture of most baked vegetables are superior to those of vegetables cooked by other methods, and the loss of vitamins and minerals is usually less; that the oven should be used to capacity, both to save fuel and for convenience.

H. R. H. and M. C. H.

MISCELLANY

White House Conference. To keep members and others informed about the reports which are gradually appearing and about the way in which the program of the Conference is being put into effect in various parts of the country, the Washington office began in September to issue a news bulletin entitled *White House Conference Happenings.*

Education and Food Habits. "Influence of Education on the Food Habits of Some New York City Families" is the title of a pamphlet reporting a study made by Lucy H. Gillett and Penelope Burtis Rice for the Department of Social Welfare, New York Association for Improving the Condition of the Poor. It compares the findings of a study made in 1914 with those of a similar one made primarily for this purpose in 1928, distinguishing between families which had and had not received education in nutrition, and giving practical suggestions for good food selection by families of the low-income group. Copies may be purchased for 35 cents each from the New York Association for Improving the Condition of the Poor, 105 East 22nd Street, New York City.

Another recent publication by the Association is "The Approximate Units of Vitamin A and Vitamin C in Foods" by Penelope Burtis Rice and Hazel E. Munsell, which sells for 5 cents.

Infantile Paralysis. A timely, authoritative, simple statement of present scientific knowledge regarding poliomyelitis is given by Dr. Simon Flexner in *Science* for September 11, 1931.

Cafeteria Litigation. Readers of the article on "The Weston Cafeteria Patent" in the September JOURNAL will be interested to know that several leading magazines in the restaurant world have recently carried descriptions of the protection offered to cafeteria operators by the Food Service Institute, Inc., 10 South La Salle Street, Chicago, Illinois. According to Allen B. Forsberg, general manager of the Institute, this protection is based on an insurance agreement with Chicago Lloyds.

Money Management for Schools. The "Money Management Method" which Florence Barnard developed so successfully in the Brookline schools and which she described in the JOURNAL for January, 1930, is the basis of three booklets from the Milton Bradley Company, Springfield, Massachusetts. Titles and prices are: "Key to Money Management," 25 cents; "Achievement Test, Book I" (for grades V to VIII), 20 cents; "Achievement Test, Book II" (for high school and college students and adults), 20 cents. Special discounts are given on quantity orders.

Home Economics and the Parent-Teacher Association. The outline for the first lesson of the study course in home economics outlined by Dr. Margaret Justin for parent-teacher associations, appeared in *Child Welfare* for September, and others will follow during the next eight months. The general title is: "The Home of Today" and the first lesson, called "The Home and the Family," uses the White House Conference as its starting point.

American Association of University Women. Two recent pamphlets are helpful in connection with parent education: "Publications," which lists material suitable for study groups, and "Book

Service Facilities," which gives annotations of books loaned to individual members and study groups by the educational office of the Association, and summarizes library services offered by various states. Copies may be obtained from the national headquarters of the Association, 1634 Eye Street, N. W., Washington, D. C.

"Cooking Cured Pork." Lucy M. Alexander and Fanny Walker Yeatman of the Bureau of Home Economics are the authors of U. S. Department of Agriculture Leaflet No. 81, in which attractive, sensible ways of cooking ham, bacon, and other cured pork products are described and illustrated.

Education in Washington. In connection with the celebration of the Washington Bicentennial, the Washington Chamber of Commerce has devoted the September issue of its house organ, *Greater Washington*, to the educational interests of the city, including a useful directory of educational institutions.

Character Education in Connecticut. The work of the newly-established Bureau of Character Education Research of the Connecticut State Board of Education is described by Adelaide Nichols under the caption "Connecticut Bends the Twig" in the *Survey Graphic* for September. The first experimental studies are being carried out in the Norwalk schools, with the cooperation of the Yale School of Education.

Educational Opportunities for American Children. A recent release from the Federal Office of Education shows that the average American boy or girl of 1931 receives two more years of schooling than the average boy or girl of 1914; that he is one of a class of 30 pupils, while his father's 1910 class had 34 pupils; that his chance of going to high school, which was but 1 in 10 in 1900, is now 50–50, and his chance of going to college is 1 in 6.

Self-Support among Students of Land-Grant Colleges. Half of the women studying home economics in colleges in this country are totally or partially self-supporting in spite of the fact that fewer opportunities exist for women than for men to earn their way in college. The figures were a release from the Department of the Interior after a survey of 52 land-grant colleges and universities.

Education under the National Government. This is the title of a spicy paper in a recent issue of *School and Society*, in which Dr. J. McKeen Cattell expresses his own views regarding the work of the National Advisory Committe on Education, and reports the results of a questionnaire sent by him to leading educators to determine their opinion regarding the preliminary report of the Committee, and also the relation of some of its members to large educational endowments.

Tenderness of Vegetables. The provisions of the McNary-Mapes amendment to the federal food and drugs act give especial timeliness to the description of "An Apparatus for Determining the Tenderness of Certain Canned Fruits and Vegetables" by Victor B. Bonney, Paul A. Clifford, and Henry A. Lepper of the United States Food and Drug Administration, which has been issued in United States Department of Agriculture Circular No. 164.

"Extemporaneous Cookery." Under the title "La Cuisine Extemporanée, Dr. E. Pozerski de Pomiane has discussed

the effect of modern ways of living on the time available for preparing meals, and given suggestions, with recipes, for attractive, nutritious, quickly prepared dishes of various types. The article appears in numbers 4 and 5 of the 1931 volume of the *Bulletin de la Société Scientifique d'Hygiène Alimentaire.*

A Cup of Chocolate. A formal "collation" enjoyed in 1813 by the celebrated Columbian writer, José María Vergara y Vergara, are described by a namesake and descendant in the *Bulletin of the Pan American Union* for August. Besides the elegance and formality of the occasion, the account pictures the ceremonious care with which the chocolate was prepared and tasted.

Sugar vs. Fat in the Diabetic Diet. One of the most widely noted papers at the Buffalo meeting of the American Chemical Society was that by Dr. I. M. Rabinowitch of the Montreal General Hospital, "Some Clinical Aspects of Endocrine Therapy." As quoted in *Science News Letter* for September 12, he had made successfully application of the theory advanced by McCollum that "the breakdown products of fats are more harmful to the body tissues than are those of sugar, and that they are responsible for some of the symptoms of diabetes. It would seem logical, therefore, to change the standard diet for diabetics by cutting out fats and allowing them carbohydrates.

Food Consumption in Mississippi Schools. A fuller report of the work briefly noted by Dorothy Dickens at the Detroit meeting of the American Home Economics Association (see JOURNAL OF HOME ECONOMICS for October, page 976) is given in Bulletin 292 of the Mississippi Agricultural Experiment Station, "Food Consumption of Boys and Girls in Six Typical Agricultural High Schools of Mississippi."

Public Markets. "Is the Public Market a Good Civic Investment?" is a question answered in the affirmative by Caroline B. Sherman in United States Department of Agriculture Leaflet No. 73.

Consumer Analysis. A reading list for this subject has been prepared by the marketing service division of the Bureau of Foreign and Domestic Commerce, United States Department of Commerce, individual copies of which may be obtained on request while the supply lasts. It includes references to books, pamphlets, and articles in periodicals, among them some of interest to home economics students of household purchasing.

Tests and Standards for Household Commodities. Among recent publications of the Bureau of Standards of the United States Department of Commerce are: "Design of Gas Burners for Domestic Use," Circular No. 394; and "Carpet Wear Testing Machine," Research Paper No. 315.

Modern Tempo. August saw rapid work on both sides of the Atlantic. Bread that was baked, buttered, and ready to eat within twelve minutes after the Kansas wheat was put into the moving combine, was noted in the *Business Week* for August 12, while wool sheared from a Southdown sheep and converted into a finished suit in 2 hours, 9 minutes, and 46 seconds, was reported in *Home and Country* for that month.

NEWS NOTES

GENERAL

The American Association for the Advancement of Science, 1933. The A. A. A. S. and the trustees of the Chicago Exposition are working together to make notable the summer session which the Association will hold at Chicago during the last week of June, 1933. The Exposition is providing funds to bring a considerable number of foreign men of science as guests to the meeting, the selections being made by the Association, which has already asked for suggestions from its various sections and from the divisions of the National Research Council.

American Civic Association. During the fifth traveling annual meeting held in the Detroit region from October 5 to 8, the points of interest visited by the members included, among many others, Cranbrook and Greenfield Village. There was a luncheon at Dearborn Inn, at which the subject of discussion was the "The Townless Highway."

American Nurses' Association. To celebrate the completion of 35 years of service, the Association is able to report a membership of 103,183.

Annual Safety Congress. At the twentieth annual congress, organized by the National Safety Council in Chicago from October 12 to 16, one section with four sessions was devoted to child education; and another, with one session, to home safety. Speakers and topics included: "Teaching Home Safety through Good Home Management," Frances L. Swain, president, American Home Economics Association; "Our Gang—A Puppet Play," Rosamond Losh, Kansas City Children's Bureau; and "The Welfare Agencies and Home Safety," Gertrude Zurrer, fellow in home safety.

Southern Agricultural Workers Conference. The officers of the home economics section of the Southern Agricultural Workers are: chairman, M. Esther Rogers, Jackson, Mississippi; vice-chairman, Lois Dowdle, Atlanta, Georgia; and secretary, Lillian Keller, Knoxville, Tennessee. The next meeting is to be held in Birmingham, Alabama, in February.

International Recreation Congress. In June the State Department of the United States extended to the countries of the world an invitation to participate in the congress to be held under the auspices of the National Recreation Association in Los Angeles, California, in July, 1932. Further information may be obtained from the secretary of the Association, 315 Fourth Avenue, New York City.

Social Work Conference. Reports of the Minneapolis meeting last June and lists of this year's officers and of American committees for next summer's International Conference are given in the Conference Bulletin for August. The new president of the Conference is C. M. Brookman of Cincinnati.

National Red Cross Nutrition Service. A conference of nutritionists for the eastern area was held in Washington, D. C., August 17 to 27. Miss Clyde B. Schuman, national director, presided, and speakers included: William Gerry Morgan, past president of the American Medical Association; Mrs. Rowena

Schmidt Carpenter, U. S. Bureau of Home Economics; Ellen McBryde Brown, editor of Junior Red Cross Magazines; Mrs. John Sipple, president, General Federation of Women's Clubs; Frank W. Hubbard, National Education Association.

Metropolitan Museum of Art. The Metropolitan Museum, New York City, is holding its twelfth exhibition of American Industrial Art from October 12 to November 22. Many forms of house furnishings are included.

The 1931–32 program of lecture courses at the Museum includes several in art appreciation for school teachers and study courses for employers of stores and manufacturers by Grace Cornell.

Research on Paperboard Containers. The Mellon Institute of Industrial Research, Pittsburgh, has announced that an industrial fellowship for research on moisture-proofing and grease-proofing paperboards used in cartons and boxes has been established in that institution by the Robert Gair Company of New York City. Dr. Marion D. Coulter, who has been granted the fellowship, is a specialist in organic chemistry and during the period 1925–1930 held a Mellon Institute fellowship for the study of certain problems in cellulose technology.

Mooseheart's Laboratory of Child Research. A laboratory of child research has been established at Mooseheart, Illinois, the institution for dependent children of deceased members of the Loyal Order of Moose, according to the United States Children's Bureau. The plans for the new laboratory were worked out by a conference of experts called together by Dr. E. A. Doll, present director of the research laboratory of the successful Training School at Vineland, New Jersey.

It will have the assistance of an advisory council of nationally known scientists. Close cooperation with other research centers and with universities will be sought, and opportunities to use the laboratory's facilities will be accorded to interested and qualified persons. Fellowships consisting chiefly of maintenance will be offered to suitable graduate students.

Nutrition Exposition in Uruguay. During the second exposition, arranged under the auspices of the National Committee for Proper Nutrition and held in Montevideo for two weeks in May, a special effort was made to interest school children in correct diet for different ages; over 14,000 pupils from 50 schools visited the exhibits, which were explained by girls from the normal schools.

Specialist in Education by Radio. Cline M. Koon, for the past two years assistant director of the Ohio School of the Air, has been appointed to the newly-created post in the United States Office of Education, which was described editorially in the September JOURNAL. His duties will be to initiate and conduct research studies of radio as an educational agency; to organize and maintain an informational and advisory service to schools and other agencies interested in the field of education by radio; to become familiar with college and university extension work so that the part radio as a tool may take in this field may be evaluated; and to prepare material for publication on phases of education by radio.

German Institute on Simplification of Housekeeping. In July Dr. Edna Meyer and her husband, who is an engineer, gave a course of lectures and discussions for the benefit of guests at Kuranstalt Jungborn in the Harz Mountains. Household equipment, laundry, cookery, plan of work, and household accounting were among the subjects considered; many points were illustrated by carefully selected exhibits.

Consultant on Radio Programs. Professor Lafayette B. Mendel of Yale University is acting as technical consultant in nutrition for the radio programs "Our Daily Food," broadcast by the Great Atlantic and Pacific Tea Company over two networks of the National Broadcasting Company.

ARIZONA

Arizona Home Economics Association. The first meeting of the year, held in Prescott, on August 27 during the Vocational Education Conference, was well attended. The principal speakers were Mrs. Mildred Weigley Wood, who spoke on children's incomes and how they may be handled, and Sharlot Hall, whose topic was "Our Part in Fulfilling the Pioneer Homemaker's Dreams."

University of Arizona. Ruth Lehman, formerly associate professor of home economics education and child development, is now completing work for an advanced degree at the University of Chicago. Faye Jones, former assistant state supervisor of home economics in Indiana, has been appointed to succeed her.

Dr. Gladys Hartley has recently been appointed assistant professor of nutrition, a position left vacant by the resignation of Dr. Bernice Wait.

During the summer, the foods laboratory was completely remodeled and up-to-date equipment, including an electric refrigerator, an electric stove, and new desks, was installed.

Extension Service. Evelyn Bentley, home demonstration agent of Pima County, has just returned from sabbatical leave spent at Oregon State College, where she completed her work for a master's degree.

Janet Burnell, home demonstration agent of Yuma County, completed work for her master's degree at Columbia University this summer.

CALIFORNIA

California Home Economics Association. Among Californians represented at the American Home Economics Association meeting in Detroit were: the state president, Mrs. Bessie Wenrich; regional councillor, Mrs. Ida Sunderlin; and the president of the Southern Section, Mrs. Evelyn Stoddard.

Bay Section. Mrs. Irma Proetz of the Gardner Advertising Agency addressed the home economics in business section on August 27 at a dinner at the Swedish Art Center in San Francisco.

Central Section. Mrs. Jo Goodhue attended the meeting of the World Federation of Education Associations in Denver.

The Central Section suffered a very real loss in the sudden death in July of its president, Mrs. Clara H. Barker.

The section was well represented at the home economics meetings of the National Education Association.

San Diego Section. A large group of home economics teachers attended the home economics section of the National Education Association at Los Angeles in July; two members went to the Orient this summer; one attended Oregon State Agricultural College; two, the University of Southern California, including Mitylene Newton, who took her master's degree; one, the University of California at Berkeley; and one, the University of California at Los Angeles.

Emphasis in the home economics department of the San Diego schools is being directed more and more toward the relationships and attitudes of the home rather than upon mere mechanical skills, and a careful analysis of existing courses is being undertaken. A new course in home economics for boys has been organized which includes a study of nutrition.

Progress in the cafeteria department has been manifested by additional clerical help which makes possible a more adequate system of cost and service records and has enabled the department to effect considerable saving in the purchase of supplies through a close check on market fluctuations. Cafeteria managers are cooperating with Mildred Henderson, the supervisor, in an effort to provide a well-balanced food service.

Southern Section. Many members of this section worked actively for the success of the home economics meetings held in connection with the National Education Association in Los Angeles last June. Maude E. Hayes of Long Beach as local program chairman deserves much credit for its successful organization. Tea was beautifully served at the Audubon Junior High School, and there was an executive breakfast at the practice house of the Manual Arts High School. Etta P. Flagg presided over a breakfast for visiting supervisors at the Women's Athletic Club at which local supervisors were hostesses. At the banquet, Miss Flagg was presented with a life membership in the National Education Association. Three well-planned and locally set up exhibits attracted much attention: one on teacher aids, one as a part of the general school system display, and one of garments and handcraft put up in department store windows.

San Jose Teachers College. Elizabeth Fee of Kansas State Agricultural College is instructor in clothing classes and Calla Van Syckle, formerly home demonstration agent in Solano County, in home management and foods.

Mrs. Margaret Coyle, on leave last year to complete work for her master's degree at Columbia, has returned to take charge of child training and adult education. Eugenia Provin, who supplied for her, has gone to Merrill-Palmer.

University of California. Professor Morey Edward Jaffa, whose death occurred this summer, was for more than fifty years a member of the faculty of the University, and will be long remembered for his intelligence and honesty in the administration of public health measures and for his pioneer investigation and teaching of the scientific aspect of nutrition. His influence at the University was a determining factor in bringing about suitable provision for instruction in this subject and in related fields of home economics.

On October 3, Professor Agnes Fay Morgan gave an illustrated lecture about her recent trip through eleven European countries. She was particularly interested in the progress in nutrition research in the English and Scandinavian laboratories and in the development of home economics education in Germany.

Irene H. Sanborn has been appointed to the staff of the department of household science as lecturer in charge of the elementary food study and the experimental cookery. Miss Sanborn comes from Cornell University, where she taught and took her Ph.D. under Professor Bancroft.

The department of household science is cooperating again this year in making laboratory tests for Consumers' Research, Inc., in connection with the course in food economics given by Professor Florence Armstrong.

For teachers of home economics, a five-year combined course in household science and household art has been arranged. The curriculum includes a regular major in one department and a minor of specified courses in the other.

The department of household science cooperated with the Alumni Bureau of Occupations to give to students employed in homes and tea rooms lectures on setting a table and serving a meal. Pres-

sure for employment led to giving this help.

GEORGIA

Georgia State College of Agriculture. Annie Turner, '31, has accepted a position in the Indian field service in Albuquerque, New Mexico.

Katherine Newton, research worker in nutrition, has returned after several months spent in studying. Mrs. Virginia Harris Harrold, in charge of experiments during Miss Newton's absence, has resumed her former work as associate professor of foods and nutrition.

The nursery school, established four years ago reopened on Monday, September 14, with an enrollment of 15 children. Dr. Dorothea McCarthy is acting director in the absence of Norah Clancy; Frances Forbes is head nursery school teacher and is assisted by Helen Bullard; Mrs. Dan Dupree, R.N., is in charge of daily medical inspections, instead of Dr. Linton Gerdine, who continues on the staff as consulting pediatrician and gives all physical examinations. Several communities have planned three-day institutes in parent education under Martha McAlpine's leadership.

Dora Mollenhoff, assistant supervisor of vocational home economics, has been studying during the summer.

Extension Service. Certie Reynolds, specialist in child care and parent education, has resigned to work for her doctorate at the University of Chicago.

Recent additions of county home demonstration agents are: Opal Ward, Laurens County; Modine Chandler, Irwin County; Henrietta White, Polk County; and Martha Cobb, Sumter County.

Susan Mathews, extension nutritionist, spent the summer at Teachers College, Columbia University, where she received the degree of master of science.

Rosa McGee, district home demonstration agent in Macon District, and Lula Edwards, district home demonstration agent in Augusta District, studied at Cornell University this summer.

Lurline Collier, state girls' club agent, and Willie Vie Dowdy, extension economist in home improvement, attended the National 4-H Club Camp in Washington and the American Home Economics Association convention in Detroit.

Girls' and Women's 4-H Club State Camp. At the seventh annual state camp for 4-H Club girls held at Camp Wilkins, Athens, Georgia, from June 8 to July 12, 948 girls from 80 counties enrolled for the short course, and 249 women for the farm women's camp.

ILLINOIS

University of Illinois. Dr. Julia P. Outhouse, former research fellow at Yale University and research assistant at the Merrill-Palmer School, comes to the home economics staff in charge of the nutrition work.

Hortense Honig is assisting Harriet Barto in the courses in dietetics.

The home economics department has been given additional space in the Woman's Building, which makes possible new laboratories for graduate students and for research in foods, nutrition, and institutional management.

The agricultural adjustment conferences which have been held for the past two years will convene again this fall in eight districts of Illinois. Members of the home economics staff will participate in the general morning meetings and will have charge of the special meeting for women in the afternoon of each of the one-day sessions.

Isabel Bevier, professor emeritus of home economics, returned from an eight months' tour of Europe about September 15.

Virginia Weaver made a trip to the Orient during the summer.

Irene Barnes taught courses in costume design at the University of Kentucky during the summer session.

Helen McCullough, former member of the home economics staff, has charge of "The Thimble" at the Marshall Field store in Chicago.

Mrs. Ruth C. Freeman and M. Attie Souder have ready for publication a bulletin entitled "A Study of Living Expenditures of Farm and Small Town Families for 1929–1930."

Mrs. Kathryn Burns, state leader, announces the following changes in county advisers: Mrs. Helen Morling from La Salle County to Warren County; Dorothy Lynch, formerly assistant junior club specialist, to La Salle County; Henrietta Selden, Illinois '30, to Marshall-Putnam Counties to succeed Grace Gerard now a member of the state extension staff in Massachusetts; Deborah Solliday, Illinois '26, to Livingston County in place of Anna Searl, who is on leave. Jackson County has completed its organization and has joined with Williamson County, with LaDaw Wainscott as adviser. Iroquois County has completed its organization during the summer and has appointed Ruth Hitzhusen of Iowa State College, adviser.

INDIANA

Ball State Teachers College. Mary Beeman, head of the department of home economics, gave a seminar in curriculum construction at Stout Institute during the first summer term and spent the remainder of the summer in Europe.

Mildred Johnson spent the first summer term studying at Iowa State College but returned to teach during the second term.

Mrs. Marie P. Ringle, formerly at Battle Creek College, began work here with the opening of the fall term as itinerant teacher trainer.

Butler University. Helen Cade and Kathryn Journey, with two student assistants, had charge of the home economics work in the summer session.

The girls in the foods classes most successfully prepared and served the dinner for President Hoover and his party on the occasion of the Indiana Republican editors state meeting in Indianapolis on June 16.

Ida B. Wilhite, head of the department of home economics, spent the summer in Europe as a student in the interior decoration travel course of the Boston School of Interior Decoration.

Indiana University. All of the home economics department is now housed in Wylie Hall. The laboratories are much larger and much better equipped, and the textile chemistry and the food chemistry laboratories have been provided with new equipment.

Purdue University. The school year opened with seven new members on the staff of the school of home economics: Dr. Gertrude Sunderlin, assistant professor of foods, succeeding Florence Scoular; Dr. Harriet O'Shea, child psychologist for the nursery school, succeeding Mrs. Katherine Read; Mrs. Helen K. Foster, assistant in applied design; Ruth Butler, nursery school assistant; Vianna Dizmang, Mrs. Juliet M. Snyder, and Mrs. Ruth Van Huss, assistants in foods.

Mrs. Mildred T. Beisel, who resigned as instructor in foods, is part-time assistant in the department of home administration and is studying for a master's degree.

Annie L. Brackett came on July 1 as part-time assistant in home economics research under Purnell funds.

A second home management house was opened at the beginning of the school year.

Laura B. Hadley, itinerant teacher trainer for vocational home economics, taught a course in adult education problems at the University of Minnesota during the summer session.

Extension. Professor Lella R. Gaddis, Aneta Beadle, Frieda Stoll, and Meta Martin attended the meeting of the American Home Economics Association in Detroit.

Kathryn McMahon, home management specialist in the extension division, resigned her position to be married on September 28 to James Kirkpatrick, county agent of Newton County. Inez Kent, district demonstration agent in Idaho, has succeeded Miss McMahon on the home economics extension staff, taking up her duties October 1.

Geraldine Hadley, former extension worker in Purdue University but more recently supervisor of the home economics courses of Arsenal Technical High School, Indianapolis, was married in August to Mr. J. H. Moorman, an architect of Richmond, Indiana. Mrs. Moorman will continue her work at the high school for the coming year.

"Choosing Food for Health and Economy" was the title of the nutrition exhibit at the 1931 Indiana State Fair. This exhibit was prepared under Aneta Beadle and Dorothea Muehl, nutrition specialists in home economics extension, and consisted of three parts: (1) typical food requirements per week for a farmer's family of five, (2) market basket wisdom, and (3) practical results of food experiments (illustrated by live rats). It was planned to assist in choosing foods necessary for health and to call attention to the fact that most of these foods can be produced economically on the farm and many of them in the smaller city gardens.

The household features of the rural electrification exhibit at the Fair were in charge of Kathryn McMahon of the home economics division and Gail M. Redfield of the home economics division of the agricultural experiment station. The exhibit featured running water for the home and electrical labor-saving devices for the laundry and kitchen.

Vocational Home Economics. Agnes V. Watson is the new state supervisor of home economics education in Indiana. Miss Watson assumed the state office July 1, coming from Vincennes, Indiana, where she had been supervisor of home economics in the city schools for two years.

A new supervisory program for vocational home economics has been established in Indiana through the appointment of four itinerant teacher trainers, one for each of the four state schools having approved teacher-training departments. The four appointees are: Laura B. Hadley at Purdue University, Hortense Hurst at Indiana State Teachers College, Elizabeth Stevenson at Indiana University, and Mrs. Marie Ringle at Ball State Teachers College.

IOWA

Iowa State College. More than 1500 4-H Club girls from nearly every county in Iowa met on the campus for their annual convention, June 17 to 20. Features of the meeting were the state music memory contest, a state-wide girls' orchestra and chorus, and an "all-talent night" at which the girls gave their own program without supervision by leaders. In group meetings the girls studied the four major projects: breadmaking, canning, clothing, and home furnishing. In the final session, girls who had done outstanding work in 1930 were honored.

Dr. Henry C. Sherman gave a series of lectures during the summer quarter before students of nutrition and physiological chemistry.

Pauline Gordon of Eastern Tennessee

College, Mrs. Marie Ringle of Battle Creek College, and Frances Kelly of the University of Utah were resident advisers in the home management houses at Iowa State College during the summer sessions.

Changes in the staff this fall are as follows: Fern W. Gleiser, recently of Drexel Institute, fills the position made vacant through the resignation of Ruth Lusby. Fannie Potgieter, formerly at the University of Washington, comes to the textile and clothing department. Thelma Larkin, formerly assistant in the experimental foods laboratory, has been appointed instructor of foods and nutrition to succeed Lela Joy Bennett who has resigned to be married. Mary Fern Sheick has been appointed as teaching fellow in the foods and nutrition department.

Gladys Anderson, assistant in the experimental research laboratory, was married to Oliver Emerson in July. She is completing the work for her doctorate under Dr. Agnes Fay Morgan, University of California. Gladys Timson and Bessie Hammer have been appointed assistants in the laboratory.

Elma Miller was married at the close of the spring quarter and returns to the foods and nutrition department as Mrs. Glen Bywater.

New members of the home economics education staff are Ruth Williamson and Beatrice Olson.

Hester Chadderdon will spend the fall quarter in advanced study at the University of Chicago, and Hazel B. McKibben will spend the year studying at Columbia University on the Lydia J. Roberts fellowship. Mary Lois Williamson goes to the University of Kentucky for teacher training and Grace Powers Hudson is teaching part time in George Washington University, Washington, D. C.

Ames was awarded first prize in the small community class in this year's Better Homes Campaign. The prize of $150 will be of great help in putting on future campaigns. The Better Homes house was furnished by students in the interior house classes of Iowa State College, assisted by the craft classes, the household equipment department, a high school class, and Boy Scouts. Twenty-five firms and organizations cooperated in the project.

Joanne M. Hansen, head of the applied art department, is a member of two committees on the President's Conference on Home Building and Home Ownership: those on farm and village housing and on interior decoration.

Florence Busse Smith, formerly head of the foods and nutrition department, was acting head of the home management department during the second summer term.

Margaret House Irwin, former member of the foods and nutrition staff, received the degree of doctor of philosophy in nutrition at the July convocation. She will spend next year in Madison, where her husband is teaching at the University of Wisconsin.

Iowa State Teachers' College. Luella Overn will spend the year studying at Columbia University.

State Department for Vocational Homemaking. The first annual conference for vocational homemaking teachers was held at Iowa State College, August 26 to 28. Florence Fallgatter discussed the new related art bulletin; Ella Moore, state supervisor of Missouri, conducted a discussion of evening school work; Hazel B. McKibben taught a high school vocational class in related art for observation by the group. Florence Busse Smith spoke before the conference on specific needs for training in homemaking as seen from the standpoint of a homemaker.

LOUISIANA

Louisiana Home Economics Association. The annual meeting of the Association is to be held jointly with that of the Louisiana Teachers Association early this fall and will include a follow-up conference of the White House Conference on Child Health and Protection. Among the outstanding speakers are Martha Van Rensselaer and Ada Hart Arlitt.

The Association was represented at the American Home Economics Association meeting in Detroit by Clyde Mobley, state supervisor of home economics, and by Iris Davenport, clothing specialist for the Louisiana State University Extension Division. Junior home economics clubs were represented by Ethel Walker, Ethel Bertheaud, Bernadine Cantrell, and Marian Irving of the Southwestern Louisiana Institute, and Clara DeFree of the Louisiana Polytechnic Institute.

The second award winner of the homemakers essay contest, sponsored by the Association, was Maizie Cockerham of Harrisonburg. She wrote on "How My Home Economics Education Helps at Home." Leona White of Kentwood received honorable mention.

The state supervisors of home economics held a state conference for vocational home economics teachers in negro schools at Southern University, June 15 to 19.

Marie White of the Federal Board for Vocational Education, who was in Louisiana in August, gave valuable help in planning the course of study in home economics that has recently been completed for the negro home economics teachers.

Louisiana State Normal College. Minnie Lee Odom has returned after a year's leave spent in study at Columbia.

Louisiana State University. Helen Carter, head of the department of home economics, has a year's leave of absence for study towards a doctor's degree in New York. Susanne Thompson is acting head for the year.

A new home management house is nearing completion and will be opened by the beginning of the fall semester.

Extension Division. The annual farmers' and farm women's short course, held at the University August 10 to 13, was attended by over 1,000 people. Out-of-state speakers on the program were Lois P. Dowdle of the *Progressive Farmer and Southern Ruralist* and See Rice of the General Foods Corporation. A playlet, "Magic Cotton," written and directed by Mary Louise Collings, home demonstration agent of DeSota Parish, was given in connection with the statewide cotton street dress revue.

The eighteenth annual 4-H Club short course, held from August 18 to 21, proved to be one of the best in 4-H Club history. Winners in the contests will compete in the annual 4-H Club Congress held in Chicago in the fall.

Gladys Tappan, agent of the southwest district, has been granted a year's leave for study at Columbia University. Estelle Fournet, agent of St. Martin Parish, is filling the vacancy.

Bertha Lee Ferguson has come to Louisiana as home garden specialist.

The state and district agents attended the Southern Regional Conference in Biloxi, September 8 to 11. Ellen LeNoir, state agent, gave papers on the "Development of a Unified County Program" and "How to Use the Survey Method for Obtaining Information for Program Making."

MAINE

Maine Home Economics Association. Maine was represented at the American Home Economics Association convention at Detroit by Doris Lake, councilor

alternate; Alfreda Skillin, president's alternate; Florence L. Jenkins, New England regional councillor; Pearl S. Greene, in charge of the research section of the American Home Economics Association; and Helen E. Lockwood.

The annual meeting and election of officers on October 29 at Portland, Maine, was held jointly with the home economics section meeting of the Maine Teachers' Association. The program included: "Preparing Ourselves to Teach Child Development and Family Relationships," by Helen Goodspeed, Philadelphia; and "Habits and Short Cuts in Sewing" by Ella J. Spooner, educational director, William E. Wright and Sons Company.

Nasson Institute. The Institute opened September 9 with the largest enrollment in its history. The home economics faculty is all new: head of department, Alice B. Foote; assistants, Elizabeth Bakie and Virginia Rand.

University of Maine. Rena Campbell, who was assistant professor in charge of child training and the home management house, has become Mrs. Merrill Bowles and resigned her full-time work but remains on the staff for the first semester for part-time work in house furnishing. Helene Heye comes from the Panhandle Agricultural and Mechanical College, Oklahoma, as assistant professor in charge of child training and home management work.

Mabel Lancaster, '31, will inaugurate institutional management work. She has been studying institutional management at the University of Chicago during the summer quarter.

Lolie Smith, M.S. Kansas State College, has been appointed full-time research worker in the experiment station and is carrying on an electrical project previously inaugurated.

Vocational Home Economics. Two new George-Reed vocational courses are being introduced this year—one at Thornton Academy, Saco, under the supervision of Alfreda Skillin and the other at Caribou High School, Caribou, under the supervision of Arline Pinkham.

MARYLAND

Maryland Home Economics Association. Dr. Lydia Roberts of the University of Chicago and Frances L. Swain, president of the American Home Economics Association, were speakers at the autumn meeting of the Association in Baltimore on Friday, October 23, held in conjunction with that of the State Teachers' Association. The State Vocational Conference preceded this meeting.

The number of departments of home economics in high schools is increasing, with six more teachers than in previous years. The work is being started in Charles County, with four centers.

Baltimore City Schools. The Baltimore teachers are glad to welcome to the city as assistant supervisor of home economics education Merle Ford of Tulsa, Oklahoma, who was this summer an instructor in the home economics department of the University of Iowa and director of the home economics department of the University experimental schools.

The home economics offices have been transferred to the new school administration building at Twenty-fifth Street, near St. Paul Street.

The fall conference of teacher training and supervisory staff of the State of Maryland and the city of Baltimore was held at the Hotel Rennert Saturday, September 26. This was a morning conference followed by luncheon at the hotel.

Dr. David E. Weiglen, superintendent of public education and secondary schools for Baltimore, spoke at the first monthly meeting of the Baltimore home economics teachers on October 8.

"Economy" is the key word back of all teaching in the home economics classes this fall. Special emphasis is laid on household renovation projects and problems in the preservation of food and the remodeling of clothing.

University of Maryland. The 1931 summer session was the largest in the history of the University. The home economics enrollment was twice that of last year.

Ruth Atwater of the National Canner's Association and Mrs. Paul Howe of Washington were special lecturers at the summer session. Eloise Davison of the National Electric Light Association gave a week's work on electricity in the home.

A new field house and a new dormitory for women are occupied for the first time this fall.

Margaret Karr, '30, who has held a fellowship at the Washington Child Research Center, Washington, D. C., and Felisa Jenkins, '31, have accepted fellowships at Mills College for this year.

Extension Service. More than 600 women attended the rural women's short course, sponsored by the extension service of the University. The work in child development was given by Mrs. Paul Howe of Washington and the clothing work by Mrs. Edna Bright. The following appeared on the program as special lecturers: Mrs. John F. Sippel, president of the General Federation of Women's Clubs; Dr. Louise Stanley, chief of the U. S. Bureau of Home Economics; Lita Bane of the *Ladies' Home Journal*; Dr. A. F. Woods of the U. S. Department of Agriculture; Mrs. John Sherman, presidential commissioner of the George Washington Bicentennial Commission; and Mrs. John Whitehurst, president of the Maryland Federation of Women's Clubs.

Western Maryland College. A course in tea-room management has been added to the home economics curriculum. Students under the direction of Florence G. Love are taking charge of the College Inn. The furnishing of a new practice house, located on the second floor of the Inn, is proving a stimulating project for students.

Many former student club members are planning to return to the first club meeting of the year. Margaret Fontaine, student delegate to the American Home Economics Association meeting in Detroit, is to give a report of the convention.

MICHIGAN

Central State Teachers' College. Jane McNinch of Port Huron succeeds Mrs. Mildred Robinson Jensen as director of clothing classes.

Michigan State College. *Division of Home Economics.* The following members have been added to the faculty of this division: Jean Hawks as assistant professor, with part time teaching in nutrition and part time research under Purnell funds; Mary Lewis to have charge of one of the practice houses and to teach child nutrition; Zoe Wertman as supervisor of dormitories and instructor in institution management; Katherine M. Hart as director of food service in the women's commons and instructor in institution management; Mary Kelly as food director in the new dormitory for girls.

Catherine Miller attended summer school at Columbia University; Irene Shaben taught clothing at Iowa State College during the second summer session; Julia Tear, Sylvia Medsker, and Mrs. Amy Newberg attended summer school at the University of Chicago. Winifred Gettemy, who has been on sabbatic leave for the past year, resumed her duties this fall.

Margaret Vardy was married during the summer to Mr. H. J. Barnum. She

will continue her work in the clothing and millinery department.

Jennie D. Fisher, M.A. 1931, has a research position with the Institute of American Meat Packers. She will work in the laboratories of the University of Chicago.

Division of Teacher Training. Gladys Love is on leave of absence for study.

Michigan State Normal College. Nelle Buckey, who has been director of teacher training at the University of Maryland, will have charge of home economics work at the Lincoln Consolidated School.

Charles McKenny Hall was opened this autumn as the new home of the student union. Edith Cole has been appointed director of food service there.

MISSISSIPPI

Agricultural and Mechanical College. Dorothy Dickins, research worker in home economics, will study this year at the University of Chicago. Elaine Massey, girls' club leader, will also be on leave studying.

Club Congress. At the club congress in July, Miss Massey and See Rice explained the scholarship fund to the club girls, who contributed $15 to it. The officers of the congress are: president, Lyn Baker, Tallahatchie County; vice-president, Mary Raggio, Copiah County; secretary, Miriam Anderson, Monroe County.

State Teachers College. Janet Smith of Colorado succeeds Betty Barker as director of the nursery school.

Vocational Education. A special teacher training conference for negro high school teachers and teacher trainers of home economics was held for three weeks at Alcorn College in August. The conference was sponsored by the State Board for Vocational Education. Active in connection with it were the state supervisor, Marie White of the Federal Board for Vocational Education, and Mary Wilson, director of teacher training of Mississippi State College for Women. About forty teachers were in attendance.

The State Vocational Board is publishing the thesis which Mary Wilson submitted to the school of home economics of the University of Chicago and which is entitled "Homemaking Activities of the High School Girls of Rural Mississippi."

Lelia Massey has just gone to Mississippi State College for Women as itinerant teacher trainer for vocational home economics schools. Miss Massey was at the University of Minnesota this summer.

White House Conference. The Mississippi White House Conference was held in Jackson in July under the state-chairmanship of Dr. Felix J. Underwood. Those assisting from out of the state were: Dr. H. E. Barnard, Mrs. Ethel Rood, and Mrs. Walter McNab Miller. A permanent organization has been made in the state and the various organizations are planning for a well coordinated child welfare program.

MONTANA

Montana State College. Dr. Gladys Branegan has been appointed acting dean of the college of household and industrial arts, which includes the departments of home economics, applied art, and secretarial science.

The home economics department has secured a long-term lease on an attractive house for use by the home management classes. New furniture is being installed and groups of six students will live in the house for periods of six weeks each. These periods alternate with student teaching for seniors taking the Smith-Hughes course. Mrs. Bernice H. Eckhoff, who received a master's degree from the College in June, is to be resident instructor.

Members of the home economics staff teaching at other institutions during the past summer included Dr. Gladys Branegan, Pennsylvania State College; Rua Van Horn, Colorado State College; Edith Rhyne, University of Colorado; and Bertha Clow, University of Wisconsin.

Montana Experiment Station, Bozeman. Dorothy Douglass, assistant in home economics research, was married on May 31 to Mr. Glenn Langley. They will live in McClave, Colorado. Mrs. Helen Mayfield has been appointed to fill the vacancy.

Vivian Baker of Bozeman and Mary Evans of Madison, Wisconsin, will assist in the department of home economics research at the station during the coming year.

Extension. Recreation is being stressed in Montana's extension programs. The Extension Service feels fortunate in having secured the help this summer of Mr. and Mrs. W. P. Jackson of the National Recreation Association and Ella Gardner of the Children's Bureau, who trained recreation leaders.

The Montana Extension Service was represented at Detroit by Julia Corkill, home demonstration agent; Nora Hulbush, home management specialist; Frances Smith, foods and nutrition specialist; and Blanche L. Lee, state home demonstration leader.

Frances Smith, foods and nutrition specialist, studied at Columbia University during the summer session.

Blanche Lee has been serving as a member of the home management division of the President's Conference on Home Building and Home Ownership. Her special assignment is that of storage.

The second annual 4-H Club convention was held at Montana State College in June. Seventy-two girls, 44 boys, 32 women leaders, and 20 men leaders were in attendance.

Vocational Education. Forty high school home economics teachers attended the annual Montana Vocational Conference conducted by the state supervisor, Rua Van Horn. The meetings were held at Montana State College, and the guest leader was Elsie Wilson of Iowa State College. Related art was the major topic of the conference this year.

OUR CONTRIBUTORS

NELSON S. PERKINS, now construction engineer with the National Committee on Wood Utilization of the U. S. Department of Commerce, received the C. E. degree from Cornell University and has had varied engineering experience. The author of bulletins and numerous magazine and newspaper articles on home building and construction, he collaborated in the writing of the books *Wood Construction* and *Light Frame House Construction*.

MARGARET WHITTEMORE obtained the bachelor's and master's degrees from Columbia University. She was head of the home economics departments at Winthrop and Salem Colleges and home demonstration leader in Kentucky before coming to Rhode Island State College, where she is dean of home economics and leader of home economics research.

STELLA HOLLY STOCKING will be found among contributors to the JOURNAL for July, 1930.

C. C. SWAIN had experience as a county superintendent, rural school commissioner for Minnesota, and professor of education at Iowa State Teachers College before he became president of Mayville State Teachers College in 1923. He received the M.A. degree from Teachers College, Columbia University.

MAUDE I. MURCHIE, a graduate of San Jose Normal School and Columbia University, has had wide teaching and teacher-training experience in California. Her present duties include those of state supervisor of home economics. MILDRED PETTES has been teaching in the Delavan High School since receiving the B.S. degree from the University of Minnesota in 1929. EVA A. WOOLSEY contributed the article "The High School Girl in Her Home and Community" to the June 1931 JOURNAL. THELMA GRAVES, a 1929 graduate of the Alabama Polytechnic Institute, taught in the vocational home economics department at Ramer High School for two years.

MARGARET HUTCHINS supplemented her training at Mechanics Institute with work for the bachelor's and master's degrees at Columbia University. Before taking her present position with the New York State Education Department, where she has the title of state supervisor, she had experience as teacher trainer at Russell Sage College and as city supervisor in the Syracuse public schools.

HELEN HAMILTON, prior to making in 1930 the field survey for Cleanliness Institute here reported, was supervisor of one of the New York Telephone Company's dining rooms and did nutrition work in Chicago under the auspices of the Elizabeth McCormick Memorial Fund. She holds a B.S. degree from Teachers College, Columbia University.

ETTA H. HANDY was a member of the staff of the Washington State College and for nine years director of the Stanford Union Women's Dormitories and Dining Halls at Stanford University before doing the work for a master's degree on which her paper in this issue is based.

PEARL S. GREENE, who holds bachelor's degrees from Northwestern University and Lewis Institute and an M.A. from Teachers College, Columbia University, has been at the University of Maine for eight years, the past four as head of the home economics department. It has been during her last three years there that the building described in this issue has been planned and erected.

HELEN MITCHELL has been director of nutrition research at Battle Creek Sanitarium since 1921 when she received the Ph.D. degree in physiological chemistry from Yale; since 1924, she has been on the staff of Battle Creek College. LILA MILLER did both undergraduate and master's work at the University of Wisconsin. Before becoming research assistant in the nutrition laboratory of Battle Creek Sanitarium she was an instructor at Mississippi State College for Women. She now has a research and teaching fellowship at the University of Michigan.

LENORE E. SATER'S undergraduate work in pre-engineering at the University of Redlands and Drake University was followed by eight years' experience in teaching high school mathematics and general science. In 1928 she went to Iowa State College to do Purnell research and part-time teaching and, since receiving the master's degree in 1930, has been an assistant professor in the household equipment department there.